



I—DESCRIPTIVE CATALOGUE OF THE AMERICAN BYRRHIDÆ.

The Byrrhidaë, in the most modern arrangement of the Coleoptera, are held to form a part of a subordinal group called the Dascilloidea and are connected on the one hand, by way of the evidently related Dermestidæ, with *Cyphon* and the Heteroceridæ and on the other, through the Rhipiceridæ and Cebrionidæ, with the large families Elateridæ and Buprestidæ and finally with the Ptinidæ, leading thence into the Heteromera. This appears to be one of the happiest strokes among the many efforts to arrive at a true generalization of affinities among the very puzzling groups, some clavicorn and some serricorn, of the old arrangement. Years ago (*Journ. N. Y. Ent. Soc.*, VI, 1898, p. 76) the writer alluded to the fact that the Clavicornia of the old school were by no means a natural aggregate, and it is with satisfaction that he finds this opinion is being corroborated, though he was in all probability by no means the first to offer the suggestion.

In the following revision the Byrrhidaë of LeConte and Horn are restricted to the series comprising the subfamilies Byrrhinæ and Nosodendrinæ of those authors, the genus *Chelonarium*, which formed another subfamily under their conception of the Byrrhidaë, having rather family than subfamily rank, being excluded from the present discussion. *Chelonarium* seems to be very rare in this country, but is more frequently met with in the warmer parts of the continent. It is said to be arboreal in habits and not epigeal, differing in this way as well as profoundly in structure from the Byrrhidaë proper.

The general anatomy of the Byrrhids is outlined with sufficient clearness in many comprehensive systematic works and need not be repeated here. The body is oval in form and very convex, of minute to moderate size and with hard integument. The Byrrhids are rather numerous in species, occurring under stones and logs, or more especially in the crevices between aggregated fragments or in sand near water courses; they are rather slow in movement,

generally closely retracting their legs and feigning death when disturbed like *Anthrenus* and other Dermestids, as well as *Cænocara* and some other Ptinids. They are essentially boreal in habitat, though a few more minute forms, belonging almost exclusively to the Limnichinæ, extend the range of the family well into the tropics. They are evidently more numerous and structurally more diversified in North America than in the palæarctic provinces, the very aberrant forms having unretractile legs apparently being altogether wanting in the latter regions. As occurring north of the Mexican boundary in North America, they may be resolved into four sub-family groups by the following primary characters:

- Mentum very large, filling the entire buccal opening; legs closely retractile; antennæ sheltered in repose beneath the anterior legs as in the Byrrhinæ; clypeal suture obliterated completely. Palæarctic and nearctic. NOSODENDRINÆ
- Mentum small or moderate in size. 2
- 2—Legs closely retractile. 3
- Legs perfectly free; clypeal suture wholly obliterated. 4
- 3—Antennæ sheltered in repose beneath the anterior legs; clypeal suture obsolete. Palæarctic and nearctic. BYRRHINÆ
- Antennæ in repose exposed along the sides of the front above the eyes or sheltered between the eyes and anterior part of the pronotum, rarely lodged partially in pronotal excavations; clypeal suture generally distinct, rarely obsolete; mandibles concealed in repose; body more or less minute in size, the crural excavations deep and sharply defined; last two ventral sutures stronger than the first two, arcuate. Palæarctic and nearctic to neotropical. LIMNICHINÆ
- 4—Antennæ in repose wholly exposed along the under surface, sometimes very long and subfiliform; surface very convex and shining, the elytra sometimes substrate. Nearctic. AMPHICYRTINÆ

Nosodendron is considered the type of a separate family in the most recent European arrangement of the Coleoptera, but in its anatomical characters it agrees so closely with the true Byrrhids, that its very large mentum should seemingly be held to have much the same relative weight as the large mentum of *Tentyria* and allies has when compared with the smaller mentum of the majority of the Tenebrionidæ. It would be far more rational to consider *Amphicyrta* as typifying a distinct family than it would to place *Nosodendron* in this category, but the number of groups having full family rank could easily be increased unduly.

The prefixed asterisks in the various tables indicate exotic genera introduced for comparison.

Subfamily NOSODENDRINÆ.

Widely extended in distribution over the palæarctic provinces and most of North America, the number of species is surprisingly small, showing that this is probably the oldest type of the Byrrhidae considered geologically; the species are however moderately numerous in Mexico; they all belong to a single genus.

Nosodendron Latr.

The body in this genus is broadly oval or oblong-oval and is not quite so convex as in the other subfamilies of the Byrrhidae. The species are more or less shining in lustre, strongly, subevenly punctate and deep black in color; the elytra have no trace of striation. Our only two known species may be defined as follows:

Form oblong-oval, evenly convex, strongly shining, deep black, the tarsi slightly piceous, the antennæ ferruginous, short, slender, with a broad and very abrupt club of three subequal transverse joints, the last rounded at tip; head wider than long, strongly parabolic in outline, the eyes basal, well developed; prothorax two and three-fourths times as wide as long, the sides strongly, evenly converging from base to apex, evenly and very feebly arcuate, the base broadly and distinctly arcuate, the apex more feebly sinuate; surface strongly, sparsely punctate, more closely and coarsely toward the sides; scutellum acutely triangular, well developed, a little longer than wide; elytra about a fifth longer than wide, slightly widest before the middle, very little wider than the prothorax, very obtuse at apex, the punctures strong, well separated, becoming decidedly coarse but only a little closer laterally, each with a short erect and squamiform parallel seta, more especially visible and sublinear in arrangement apically; sterna coarsely but not densely punctate; abdomen finely, sparsely and unevenly so, very convex narrowly along the middle, the sutures very coarse and deep, strongly arcuate medially, becoming straight and transverse laterally, the excavation for the tibiæ deep and extending obliquely almost across the second segment, with a lateral oblique connecting channel for the tarsi extending entirely through the second segment; legs short and very stout, the tarsi short and notably slender, simple. Length 4.7-5.2 mm.; width 2.7-3.0 mm. Northern Illinois and Kansas. [*Nosodendron unicolor* Say,—Long's Exped., 1824, Vol. 2, p. 274].

unicolor Say

Form slightly more narrowly oval, rather less deep black and notably less shining, similarly but more coarsely and notably more densely punctate above; elytral setæ not solitary as in the preceding but aggregated into small fulvous clusters, especially visible toward the sides and apex and by oblique illumination; under surface opaque, the sterna deeply but rather sparsely punctate, the abdomen



finely, sparsely and unevenly; abdomen and the deep groove-like sutures nearly as in *unicolor*, the oblique depressions for the hind tibiæ much shallower and less abruptly limited but almost similar in extent, the fine grooves for the tarsi wanting; legs nearly as in *unicolor* but piceous in color, the antennæ similar but piceous, with the club alone ferruginous. Length 4.6–5.0 mm., width 2.6–2.9 mm. California (Placer and Siskiyou Cos.). [*Nosodendron californicum* Horn,—Tr. Am. Ent. Soc., 1874, p. 22]. **californicum** Horn

The mesosternum is nearly as in the Byrrhinæ, except that the median apical notch receiving the tip of the prosternum, is much smaller and more angulate and the prosternum narrower and more attenuate posteriorly; the facets of the eyes are almost perfectly flat and defined only by a reticulation of very fine feeble lines. The general surface of the elytra under high power is seen to be closely, excessively minutely and evenly punctulate, the corresponding surface of the pronotum being finely and feebly reticulate in unevenly wavy lines.

The formation of the abdomen, and particularly the deep coarse groove-like sutures, is very remarkable and significant, because differences in the form of the abdominal sutures are valuable taxonomic characters in separating genera in the tribe Pedilophorini of the Byrrhinæ, and also since abdominal sculpture constitutes a prominent point of difference between *Byrrhus* and the closely allied *Cytilus*. *Unicolor* Say, is said by Dr. Sharp to belong to the suppressed *Dendrodipnis* Woll., while *californicum* is a true *Nosodendron*.

Subfamily BYRRHINÆ.

This subfamily is the largest of the four and also includes the greatest development of bodily size, although there are some minute forms also, such as *Syncalypta spinosa* Rossi. In North America we have four tribal groups, definable as follows:

- Mesosternum rather broad between the coxæ, with a broadly rounded median emargination for the tip of the short and wide prosternal process; mandibles not concealed in repose; elytra generally sparsely and simply punctate as in *Nosodendron* and similarly never having a trace of striation. PEDILOPHORINI
- Mesosternum as in the preceding tribe; mandibles generally not concealed in repose; elytra shining and very sparsely sculptured as in Pedilophorini, but having fine striæ which are feebly impressed and peculiarly disposed, those toward the suture uniting posteriorly with the sutural striæ; legs more feebly retractile than usual, the abdominal sutures straight; body small in size. SIMPLICARIINI

- Mesosternum as in the two preceding tribes; mandibles concealed in repose by the prosternal lobe; elytra generally finely punctate and chagrined, the punctures generally fine and very close, the surface always striate, the striæ generally shallow and fine though abrupt, not impressed, regular in position though sometimes contorted slightly. BYRRHINI
- Mesosternum much narrower, wholly occupied by the deep transverse pit receiving the obtuse tip of the prosternal process; mandibles apparently not concealed in repose; elytra deeply sulcate; size minute. EXOMINI

The first three of these tribes are widely distributed throughout the subarctic regions of the world, while the fourth is represented by a single anomalous species from the coast regions of British Columbia.

Tribe PEDILOPHORINI.

In general form and sculpture, as well as in many structural features, this tribe plainly connects the more typical Byrrhids with the preceding very isolated *Nosodendron*. The several genera are definable and easily distinguishable by peculiarities of abdominal and tibial structure, as well as type of sculpture of the elytra and abdomen. The general structure is otherwise rather uniform throughout; and the antennæ are moderately short, gradually broader and compressed apically through the last six joints, the first stout, the third more or less elongate, slender and cylindrical. The seven genera in my collection may be defined as follows:

- Tibiæ broad, very obtusely angulate externally or obliquely truncate externally at apex; crural depressions of the abdomen very shallow and gradual in formation, extending through the second segment, the sutures all fine, the first obsolete, the posterior feebly arcuate; frontal edge just behind the labrum sinuous, the sinus filled with pale coriaceous membrane. [Type *P. auratus* Duftsch.]. Palæarctic. ***Pedilophorus**
- Tibiæ less broad to slender, straight or feebly and evenly arcuate in outline externally throughout; frontal edge behind the labrum transverse, straight and unmodified; crural depressions of the abdomen never extending behind the first segment; all the sutures distinct. 2
- 2—Crural depressions of the abdomen very shallow and gradual in formation, undefined, the tarsi always free in repose. 3
- Crural depressions deep and abruptly formed, well defined to shelter the femora and tibiæ, the tarsi free; punctures of the elytra not evenly disposed as in the genera preceding but denser or sparser at various parts of the surface. 8
- 3—Legs stout, the tarsi short: vestiture of the upper surface recumbent,

- sometimes mingled with short feeble erect setæ, which are never very conspicuous. 4
- Legs slender, the tarsi conspicuously long. 7
- 4—Abdominal sutures arcuate. 5
- Abdominal sutures all perfectly straight from side to side. 6
- 5—First two abdominal sutures very fine, the last two strong. [Type *Pedilophorus nitidus* Schall.]. Palæartic. ***Lamprobyrrhulus**
- All abdominal sutures equally distinct, the abdominal sculpture always more uniform and denser. [Type *Byrrhus æneus* Fabr.]. Palæartic and nearctic. **Morychus**
- 6—Abdominal sutures equally distinct throughout, the ventral sculpture uniform and very close-set; pubescence of the upper surface not uniform as in all the preceding genera but condensed into streaks and spots, the condensations independent of the distribution of the punctures, the latter being uniform. [Type *Pedilophorus subcanus* Lec.]. Nearctic. **Tylicus**
- 7—Body very small in size, the under surface throughout very sparsely punctate, the abdominal sutures equally distinct, arcuate; vestiture of the upper surface consisting of long, erect and bristling hairs. [Type *Pedilophorus variolosus* Perris]. Palæartic. ***Trichobyrrhulus**
- 8—Crural pits of the abdomen very deep, extending to and forming part of the hind margin of the first segment for a considerable distance at each side; first two sutures very fine, the last two coarse, nearly as in *Lamprobyrrhulus*; abdominal punctures very coarse and foveiform, close-set; punctures of the upper surface irregularly aggregated into denser spots and areas, wherein the generally polished surface frequently becomes more or less chagrined. [Type *L. formosus* n. sp.]. Nearctic. **Listemus**
- Crural pits almost equally deep, their well defined transverse posterior walls parallel with the hind margin of the first segment and at some distance therefrom to the extreme sides of the abdomen, the ventral surface rather finely and loosely punctured almost throughout, the first two sutures nearly as distinct as the last two; body much larger in size than in any other genus and with radically different sculpture, the pronotum evenly and moderately punctate, the elytra with even vittæ of aggregated punctures, separated by equally wide vittæ in which the punctures are very minute and much sparser. [Type *Pedilophorus lecontei* Wickh.]. Nearctic. **Eusomalina**

That the lack of elytral striation is a character of tribal importance is shown by its constancy, no trace of striation ever being visible even in *Pedilophorus lecontei* Wickh., where the perfectly even, alternately metallic green, strongly punctured and brilliant coppery, feebly punctured vittæ are unaccompanied by the faintest suggestion of striation.* Some species have an oblique spatuliform

* The indistinct sulcation of the elytra mentioned by Wickham in describing his *Pedilophorus hesperus*, I cannot understand, but presume that it is rather a corrugation of the surface, perhaps accidental and in no way striiform in nature.

lobe extending inferiorly from the apex of the third tarsal joint, well developed in *Morychus oblongus* Lec.; but in the very similar and apparently perfectly congeneric *subsetosus* of Fall, becoming virtually obsolete. It is therefore of no great taxonomic importance, —rather a surprising condition for a structural character of that nature. The indications are, also, that it varies sexually to some extent.

Pedilophorus Steff., *Lamprobyrrhulus* Ganglb. and *Trichobyrrhulus* Ganglb., are purely European and need not engage our attention further at the present time; the first is an isolated monotypic genus, the radically distinct anatomic characters of which distinguish it from the other two on the most cursory examination. It is furthermore not closely related to *Morychus* except in tribal features. The last two are considered subgenera of *Pedilophorus* in the recent European catalogue but erroneously, for, if they are subgenera, *Morychus* also must be so regarded and the latter is held to be distinct by the compilers of the catalogue.

Morychus Erichs.

The body in this genus is oblong-oval and convex, evenly and loosely punctate above, with short decumbent vestiture which is sometimes sparsely intermixed with short erect hairs and densely punctate and pubescent beneath. The three species in my cabinet may be defined as follows:

- Tarsi strongly lobed beneath.....2
 Tarsi with the lobe vestigial.....3
 2—Form rather broadly, evenly oblong-oval, convex, strongly shining, with cupreo-æneous lustre, the under surface and legs deep black, the tarsi alone pale; vestiture above rather fine, fulvous, unmixed with more erect hairs and easily removable; that beneath a little shorter, more cinereous and denser; head evenly convex, moderately closely and finely but deeply perforato-punctate, the antennæ piceous-brown, slightly darker and gradually enlarged distally; prothorax but very slightly more than twice as wide as long; sides converging and very feebly medially arcuate from base to apex, the angles sharp, the posterior slightly, the anterior notably, acute; punctures like those of the head, well separated throughout; scutellum densely flavo-pubescent; elytra parallel, with but feebly arcuate sides, very obtusely rounded at apex, a third longer than wide, the punctures deep, perforate, not very coarse and well separated throughout; under surface very densely, rather strongly but only moderately coarsely punctate throughout. Length 5.0

- mm.; width 2.8 mm. Vancouver Island and British Columbia (Goldstream). [*Pedilophorus oblongus* Lec.,—Report Survey 1857, p. 39]..... **oblongus** Lec.
- Form nearly similar, the upper surface rather more convex, strongly shining, with brilliant metallic-green lustre, black beneath, the tarsi piceous; pubescence of the upper surface notably longer, coarser, closer and more persistent than in *oblongus* and becoming somewhat bristling toward apex, rather coarse, close and pale yellowish-cinereous beneath; head nearly as in the preceding; prothorax less transverse, barely twice as wide as long, the sides and angles nearly similar, the base more angulate medially; punctuation nearly similar, the vestiture closer and coarser; scutellum similar; elytra fully a third longer than wide, the sides rather arcuate, the apex rather less broadly rounded than in *oblongus*, the width at the middle more evidently exceeding that of the prothorax, the punctures nearly similar and well separated but finer; under surface similarly very densely sculptured. Length 4.6 mm.; width 2.65 mm. British Columbia (Vernon),—Venables..... **insulsus** n. sp.
- 3—Outline and convexity as in *oblongus*, shining, rather obscure æneous in lustre above, wholly black, with feeble piceous tinge beneath, the tarsi not paler; pubescence of the upper surface rather short, fulvous, plentiful and rather persistent, intermixed with numerous erect and bristling hairs laterally and toward tip, the erect hairs rather more cinereous or silvery; hairs of the under surface much shorter, more even and dense; head evenly convex as in the two preceding but with the punctures finer; prothorax distinctly more than twice as wide as long, the sides more strongly converging from base to apex, feebly arcuate, the punctures rather fine, distinctly separated but closer than in the two preceding; elytra as in *oblongus*, very obtusely rounded behind, the punctures like those of the pronotum but rather stronger, closer than in the two preceding; abdomen equally densely and somewhat more finely punctured. Length 4.0 mm.; width 2.3 mm. Montana (Kalispell),—Wickham. [*Pedilophorus subsetosus* Fall,—Tr. Am. Ent. Soc., 1907, p. 224].
subsetosus Fall

Besides the above, the four following species have been described as follows:

- Oval, convex, obliquely attenuate anteriorly, obtuse posteriorly, dark greenish-bronzed above, uniformly but not closely punctured and clothed with coarse white hairs; prothorax twice as wide as long, strongly narrowed in front, the sides oblique and scarcely rounded; scutellum clothed with white hair; elytra oval, wider than the prothorax, obtusely rounded behind; under surface piceous, densely punctured, covered with brownish-gray pubescence; tarsi not lobed beneath. Length 4.2 mm. Nebraska. [*Pedilophorus æneolus* Lec.,—Sm. Misc. Coll., 167, 1863, p. 74]..... **æneolus** Lec.
- Oblong, blackish, feebly shining, with faint æneous tinge, the pubescence pale, recumbent and moderately coarse; head deeply and densely, rather coarsely punctured, the front with a distinct median fovea,

around which the punctures are less crowded; antennæ piceous-red, gradually enlarged and blackish distally; prothorax distinctly, finely and rather closely punctured, narrowed anteriorly, the sides not arcuate but slightly sinuate, the lateral margin sharp, the angles all acute; scutellum with pale yellowish pubescence throughout; elytra continuing the outline of the prothorax, finely, distinctly and fairly closely punctured and indistinctly sulcate, the sides subparallel, the tips conjointly rounded; under surface rufo-piceous, thickly clothed with pale pubescence which almost conceals the sculpture, especially on the abdomen; legs piceous, the femora paler, all grooved for the reception of the tibiæ; tibiæ spinulose externally, the front and middle pairs with the external margin arcuate, the posterior simply broader toward tip, the anterior alone grooved for the reception of the tarsi; third tarsal joint lobed beneath. Length 4.0 mm. Colorado (Leadville). [*Pedilophorus hesperus* Wickh.—Can. Ent., 1903, p. 182]. **hesperus** Wickh.

Broadly oblong-elliptical, dark cupreo-æneous, the pubescence very short, fine, sparse and recumbent; head coarsely, rather closely punctate throughout; prothorax with the sides nearly straight, the hind angles distinctly acute, the anterior only slightly less than right; surface more finely and sparsely punctured than the head, the punctures separated by from two to four times their own diameters at the middle, becoming closer and slightly larger at the sides, having a distinct foveiform depression within the hind angles; elytra punctured like the pronotum; under surface piceous, densely punctate and pubescent as usual; third tarsal joint lobed. Length 5.6 mm.; width 3.3 mm. Washington State. [*Pedilophorus subcupreus* Fall,—Tr. Am. Ent. Soc., 1907, p. 225]. **subcupreus** Fall

Moderately broadly oblong-elliptical, blackish, with feeble green-bronze lustre, shining, clothed with recumbent black hairs, which become predominantly mingled with white and brown laterally, inclosing at the sides of the elytra a conspicuous dark spot; antennæ black, the sixth joint as wide as long, the seventh distinctly transverse, eighth to tenth strongly transverse: head moderately closely, strongly punctate, with a smooth spot at the middle of the vertex but without frontal fovea; prothorax nearly as wide as the elytra, the sides nearly straight, the angles acute; surface deeply but not coarsely punctate, the punctures separated by a little more than their own diameters at the middle, becoming slightly larger and closer laterally; elytra with the sides parallel and very feebly arcuate in basal two-thirds, the punctuation similar to that of the pronotum; under surface rufo-piceous, densely, rather coarsely punctate, with recumbent ochreo-cinereous pubescence; tarsi not lobed. Length 4.0 mm.; width 2.4 mm. New Mexico (Las Vegas). [*Pedilophorus lateralis* Fall,—l. c., p. 225]. **lateralis** Fall

In noting the published characters of the four species last described, which are unknown to me and provisionally referred to *Morychus*, it becomes evident that some doubt may attach to

hesperus Wickh., in this generic assignment. It is probable that the feeble sulcation of the elytra referred to is to some extent accidental, as before remarked; and in fact one of my examples of *oblongus* exhibits a faint longitudinal costulation by oblique illumination, though this is unaccompanied by the feeblest trace of true striation. But in *hesperus* mention is made of a distinct frontal fovea, and it is said that the antennæ are relatively much stouter than in *lecontei*; as the antennæ in the latter are not materially more slender than in the prevailing type of *Morychus*, it may be that we have here another decisive divergence; these discrepancies, together with the aberrant coloration of the legs, render the assignment of *hesperus* to *Morychus* somewhat doubtful. *Lateralis* Fall, is also doubtfully attached to *Morychus* and I would assign it to the genus *Tylicus*, which follows, in company with *subcanus* Lec., if it were evident that the abdominal sutures were perfectly straight and not arcuate. *Subcupreus* Fall, is almost undoubtedly a close congener of *oblongus* and *subsetosus*, but of *æneolus* Lec., the published characters are not sufficient to warrant a decision.

Tylicus n. gen.

The perfectly rectilinear abdominal sutures in this genus form a striking and apparently valid taxonomic character, accompanied as it is by a number of other more or less evident differences. The vestiture of the upper surface, for example, is not uniform in distribution as it is in *Morychus*, but is condensed into streaks and spots; but, singularly, this condensation is not accompanied by any material condensation of the punctures, for under sufficient optical power the punctures are observed to be distributed uniformly under these patches of condensed pubescence, just as they are in *Morychus*, showing that it is only those genera in the tribe Pedilophorini having deep and abrupt fossæ for the reception of the hind legs, that the sculpture of the elytra becomes irregular.

The single type of *Tylicus* may be known by the following short diagnosis of LeConte:

Elongate-oval, convex, rounded behind, obliquely narrowed in front of the elytra, black, irregularly mottled with very short gray pubescence like hoar-frost and thinly clothed with short, erect, black bristles; under surface finely, densely punctured, finely pubescent; legs piceous, the tarsi paler, the fourth [third] joint with a long lobe.

Length 4.25 mm.; [width 2.4 mm.]. Escanaba (Lake Superior). [*Pedilophorus subcanus* Lec.—Pr. Am. Phil. Soc., 1878, p. 609].

subcanus Lec.

The erect black bristles are very stiff but not squamiform as they are in the *Syncalypta* section of the Byrrhini; they are short but numerous and somewhat conspicuous. The gray hairs are scattered more especially toward the sides and apex, but not condensed into spots, the hairs forming the condensed streaks and spots alluded to above, being formed exclusively of decumbent black hairs. The abdomen is sculptured differently from any *Morychus* known to me; there the punctures are somewhat coarse, very dense and subconfluent; here they are notably fine and deep; but, though very close, they are well defined and isolated among themselves and very evenly distributed throughout. The second segment is longer than either the third or fourth.

Listemus n. gen.

In this genus the hind femora and tibiæ are securely sheltered in repose within very deep fossæ, extending fully to and for some distance along the hind margin of the first ventral segment, the tarsi being free. This is a radical taxonomic feature separating *Listemus* and *Eusomalina* from *Morychus* or any of the genera allied thereto. In addition, in *Listemus* the abdomen becomes very coarsely cribrate, but the sutures are arcuate as in *Morychus*, the last two coarse, the first two fine, which constitutes another structural difference between the two genera. The tarsi are lobed beneath throughout and strongly so as a rule. I have before me at present the three following species:

Condensed areas of elytral punctuation very feebly defined and but slightly differentiated. Form elongate-oval, very convex, gradually and rather narrowly rounded behind when compared with *Morychus*, shining, bright æneous in lustre, with feeble greenish tinge, deep black throughout beneath, the tarsi alone paler, picco-testaceous; vestiture above consisting of rather long, sparse and decumbent pale fulvescent hairs, without intermixed erect hairs, on the under surface short, sparse, more cinereous but inconspicuous; head evenly convex, rather strongly, closely punctate, becoming almost impunctate centrally; prothorax two and one-half times as wide as long, strongly narrowed from base to apex, the sides nearly straight, the apical angles produced and very acute; punctures fine, sparse and but slightly uneven in distribution, rather coarse but still widely

separated toward the sides; scutellum small, longer than wide, acute, with rounded sides, nearly nude; elytra a fourth longer than wide, near basal third but slightly wider than the prothorax, the sides continuing the sides of the latter, thence gradually narrowing, with broadly, then strongly, rounding sides to the tip; punctures not coarse but deep, sparse, larger and subserial in arrangement toward the sides, becoming finer and still sparser in a few indefinite, smoother and rather more shining areas on the upper part of the surface; under surface convex, densely and coarsely cribrate. Length 3.8 mm.; width 2.2 mm. Northern Pacific coast regions. [*Morychus acuminatus* Mann.,—Bull. Mosc., 1852, p. 341]. **acuminatus** Mann.

Condensed areas on the elytra abruptly defined, the smooth areas speculariform and almost impunctate. 2

2—Form shorter and less posteriorly acuminate than in the preceding, broadly oval, very convex, black, with feeble æneous to bright metallic green lustre, the under surface and legs deep black throughout, the tarsi not materially paler; pubescence of the upper surface short, rather coarse, recumbent, without intermixed erect hairs, very uneven in distribution, close on the punctured part, almost wanting in the smooth areas, intermingled fulvous and subcinereous in color, very short, sparse and cinereous on the under surface; head evenly convex, coarsely and densely punctured throughout; prothorax more than twice as wide as long, strongly narrowed from base to apex, with feebly subsinuate sides, very strongly declivous toward the apical angles, which are produced and acute as usual; surface finely, closely punctate medially, with the pubescence radial in arrangement, coarser and rather sparser toward the sides; scutellum very small; elytra about a fifth longer than wide, two and three-fourths times as long as the prothorax and subequal thereto in width, the sides parallel and feebly arcuate, gradually obtusely rounding from about the middle, the apex moderately obtuse; punctures densely aggregated in large areas, leaving a few mirror-like spots and streaks, which are smooth and very minutely, remotely punctured, the condensed areas having the surface generally somewhat chagrined; under surface coarsely but rather less densely cribrate than in *acuminatus*. Length 3.65 mm.; width 2.1 mm. California (Arcata, Humboldt Co.). **formosus** n. sp.

Form and sculpture nearly as in the preceding, black, the upper surface strongly shining throughout and somewhat bronzed, the under surface and legs black, the tarsi piceous; vestiture above short, decumbent, rather sparse, mottled confusedly bright fulvous-red and cinereous, still shorter, sparser and cinereous beneath; head strongly and densely punctate, evenly convex; prothorax nearly as in the preceding in form, sculpture and pubescence; elytra nearly as in the preceding but still shorter, only very little longer than wide and more broadly and obtusely rounded behind, the punctures coarser, deep, evenly distributed and separated by not quite twice their own diameters everywhere except in a few generally rounded spots which are mirror-like and finely, very remotely punctulate, the surface throughout the coarsely punctured areas smooth and

shining, not at all chagrined; under surface coarsely cribrate as in *formosus*, the tarsi notably shorter and still more slender. Length 3.25 mm.; width 1.9 mm. California (Hoopa Valley, Humboldt Co.).
satelles n. sp.

The last two species are mutually rather closely allied, but may be distinguished by the sculpture as well as the more obtuse elytra of *satelles*. In *formosus* the coarse elytral punctures become contiguous, with the surface opaculate, toward base, while in *satelles*, though coarse and becoming very slightly closer basally, they are always clearly isolated, with the interstices shining like the rest of the surface.

The much smaller and practically nude scutellum of this genus is another element distinguishing it from *Morychus* and allies. In the next genus the scutellum is rather better developed, but is relatively not so large as in *Morychus* and differs in being nude and not densely pubescent.

Eusomalia n. gen.

This genus is represented thus far by a single splendid species, by far the largest of the Pedilophorini and very aberrant in sculpture and ornamentation. Structurally it differs from *Listemus* in having the deep fossæ for the hind legs end posteriorly in a straight transverse line, parallel to the apex of the first ventral but at some distance therefrom; the tarsi are similarly free and are lobed beneath. The type may be described as follows:

Evenly and broadly oval, very convex, strongly shining, the pubescence of the upper surface fine, decumbent, excessively short and sparse and scarcely discernible, still less evident on the virtually glabrous under surface; upper surface bronzed anteriorly, the elytra with broad vittæ, lost at the sides, alternately deeply but not densely, toward the sides coarsely, punctured and bright metallic green in color, and equally wide, minutely, sparsely punctured and bright coppery in lustre; under surface and legs black throughout, the tarsi scarcely paler; head strongly, not densely punctate, convex, with a feeble indentation on the median line at a little behind the line of the eyes; antennæ dark piceo-testaceous, of the usual form in the tribe though only moderately thickened distally; prothorax more than twice as wide as long, narrowed from base to apex, with nearly straight sides and acute angles, the apical produced; surface evenly, rather finely and sparsely punctate, more coarsely and slightly more closely toward the sides, where there is a broad gutter-like impression along the side margins, becoming obsolete basally; scutellum a little longer than wide, acute, flat, nearly nude; elytra a fourth longer than wide, oval, obtuse and very strongly declivous behind,

the apex feebly lobed from a vertical viewpoint; sterna coarsely but not densely cribrate, the abdomen much more finely, rather sparsely punctate, more coarsely at the middle of the first segment and with a very dense patch at each side of the second segment. Length 7.7 mm.; width 4.9 mm. Idaho (Cœur d'Alene),—Wickham. [*Pedilophorus lecontei* Wickh.,—Can. Ent., 1903, p. 180].

lecontei Wickh.

Prof. Wickham very kindly consented to part with one of the only two known examples of this species, and it now rests in my collection as one of its most valued specimens.

Tribe SIMPLOCARIINI.

Comparatively few species, widely distributed over the higher latitudes of the northern hemisphere, are sufficiently isolated in structure to require a separate group or tribe under the above name. They differ widely from the Byrrhini in their shining and sparsely sculptured integuments, less closely retractile legs and peculiar system of elytral striation; from the preceding tribe they differ in possessing true elytral striæ. There are two genera as follows:

Posterior femora in repose resting under and against the hind coxæ throughout, the coxæ extending to the sides of the body, the epipleura narrow anteriorly, gradually disappearing at the usual point opposite the hind coxæ; antennæ gradually enlarged and compressed distally through about the last five joints as in the preceding tribe. [Type *S. metallica* Sturm]. Palæarctic and nearctic. . . **Simplocaria**

Posterior femora in repose resting against both the hind coxæ and the obliquely truncated posterior end of the anterior part of the epipleura, the latter much wider than in *Simplocaria*, the hind coxæ not attaining the sides of the body; antennæ with an abrupt 3-jointed club. [Type *S. carpathica* Hampel]. Palæarctic. ***Trinaria**

Trinaria Muls., is represented at present by the type species only; there are some forms of true *Simplocaria*, such as *acuminata* Erichs., that imitate it very closely in outward form and especially in the nearly glabrous integuments and sharply acuminate tip of the elytra, but the epipleura and hind coxæ, as well apparently as the antennæ, do not depart from the normal type of *Simplocaria*, where the scutellum throughout is better developed than in *Trinaria*; the latter should therefore be considered a distinct genus and not a subgenus of *Simplocaria*, where it now rests in the latest European catalogue.

Simplocaria Markh.

Either our species have not been well collected, or the genus *Simplocaria* is much less developed in America than it is in Europe; I am inclined to the latter assumption. My collection, however, seems to include three species, which may be separated as follows:

Hind tarsi less elongate, much shorter than the tibiæ, very slender, completely non-lobate. Form elongate-elliptic, convex, notably pointed behind, piceous-black, the upper surface with shining bronzy lustre, the under surface black, the abdomen rufo-piceous, the legs pale brownish-testaceous throughout; pubescence above rather sparse, longer and uniform on the pronotum, variegated with silvery patches on the elytra, short, decumbent, uniform and moderately close beneath; head evenly convex, minutely, sparsely punctulate; antennæ rather slender, almost black throughout; prothorax slightly more than twice as wide as long, the sides strongly converging and feebly arcuate from base to apex, the apical angles only moderately advancing but very acute; surface very finely punctate, more closely toward the middle, rather more sparsely and not at all more coarsely toward the sides; scutellum equilatero-triangular, having radiating hairs which are not very dense; elytra evenly oval, one-half longer than wide, the sides arcuate, continuing the curvature of the thoracic sides, gradually rounding to the conjointly pointed apex, the striæ fine but distinct, somewhat impressed, evanescent apically, the sutural deeper posteriorly, the second and third joining the sutural at posterior third and fifth; punctures almost invisible, sparse; abdomen rather finely and not deeply, subconfluently punctate, the sutures all distinct and straight, the second segment longer than the third or fourth. Length 3.0 mm.; width 1.65 mm. British Columbia (Caraboo District). **columbica** n. sp.

Hind tarsi much longer, equaling the hind tibiæ in length or very nearly. 2
2—Form nearly as in *columbica* but not quite so pointed behind, black and shining, the upper surface with faint bronzy lustre, the under surface picescent, the abdomen slightly, the legs much, paler; pubescence nearly as in the preceding but rather more abundant, that of the pronotum shorter, fine and less distinct; head nearly similar; prothorax notably more developed and not so short, barely twice as wide as long, in form and sculpture nearly as in the preceding; elytra evidently less than one-half longer than wide, evenly and broadly rounded at the sides, continuing those of the prothorax, the apices conjointly moderately acute; punctuation sparse and very minute; striæ stronger and more impressed than in *columbica* and continuing to the tips, the sutural rather deeply impressed throughout, the lateral also distinct in about median third of the length, the second and third joining the sutural near the tip; under surface nearly as in the preceding, the punctuation shallow and still finer, very dense on the abdomen. Length 2.8–3.2 mm.; width 1.45–1.68 mm. [*Byrrhus tessellatus* Lec.—Agassiz, Lake Superior, 1850. p. 224.]

tessellata Lec.

Form rather more elongate, black, shining, with only the faintest bronzy lustre, the under surface piceous, the legs paler, rufous; pubescence scantier than in either of the preceding, the elytra only very faintly variegated with irregular patches of very short silvery hairs; head and prothorax nearly as in the preceding, except that the small punctures of the pronotum are still more minute and less close-set medially, becoming still sparser and almost invisible laterally; scutellum much less pubescent; elytra rather more elongate and still more rapidly and obtusely ogival at apex, somewhat less arcuate at the sides and a little more rapidly rounding posteriorly, the striation as in *tessellata*, the punctures everywhere sparse and extremely minute; abdomen closely but finely and unusually feebly punctatogrugulose. Length 2.8-3.0 mm.; width 1.5 mm. Colorado.

subnuda n. sp.

It is assumed that the species named *tessellata* in the table, not rare in the elevated parts of New Hampshire, is the same as that referred to in two brief lines by LeConte as inhabiting the southern shore of Lake Superior; I found one example at the extreme summit of Mt. Washington and it is probably widely diffused in the colder regions of the continent. It is however not the same as the European *metallica*, being more elongate in form and much less broadly obtuse posteriorly. All of the above species are more elongate than any of the four European species in my collection; excepting *acuminata* Er., and that is much smaller and of radically different sculpture and vestiture.

Tribe BYRRHINI.

The chief outward character of this tribe is the stout oval and convex body, with finely, very densely punctured, densely pubescent integuments and deeply retractile legs. The elytral striæ are more or less fine, having the nature of abruptly formed shallow grooves—not impressed lines as in the preceding tribe—and are almost regular, the three or four beyond the sutural not entire but never joining the sutural stria; occasionally the striæ are represented merely by series of detached punctures. The antennæ are short, very gradually stouter distally and with the third joint elongate, not differing materially from the usual form in the preceding tribes, and the abdominal sutures are all distinctly arcuate. The six genera known to me may be defined as follows:

Fossæ for the hind legs deep though rather gradually formed, without prominent margins; upper surface never having erect setæ; size moderate to rather large. 2

- Fossæ still deeper and much more abruptly formed, defined by an elevated bead-like margin; upper surface always bristling with short erect clavate or squamiform setæ; size small to minute. 3
- 2—Tibiæ more slender, nearly straight, obliquely truncate externally at apex; abdominal segments finely, densely chagrined and opaque laterally and along their apices; vertex unmodified. [Type *B. sericeus* Forster]. Subarctic of the northern hemisphere. **Cytilus**
- Tibiæ broader, more flattened, always evenly rounded externally throughout their length; abdominal segments never finely chagrined at any part of the surface; vertex generally with a short transverse line at the middle, immediately behind which there are two small pale ocellæ-like spots. [Type *B. fasciatus* Forster]. Subarctic of the northern hemisphere. **Byrrhus**
- 3—Elytral striæ extremely fine and scratch-like; epipleura anteriorly very narrow and ill-defined. [Type *B. murinus* Fabr.]. Palæarctic and nearctic. **Porcinolus**
- Elytral striæ less fine and always punctate; sometimes consisting simply of series of detached punctures. 4
- 4—Epipleura anteriorly very narrow and not well defined; sculpture dense, at least beneath. 5
- Epipleura anteriorly broad and well defined along the metasternum; sculpture sparse throughout; size more minute. 6
- 5—Antennæ very gradually enlarged distally; sculpture of the elytra somewhat as in *Cytilus*, the intervals alternating somewhat in elevation; scutellum well developed. [Type assumed *C. erichsoni* Reitt.]. Palæarctic. ***Curimus**
- Antennæ with a 3-jointed club, which is not abruptly formed but rather gradual; elytral striæ generally less groove-like and tending to be represented by series of shallow irregular punctures, the intervals all flat and equal; scutellum minute; clavate setæ more linear in arrangement; body of much smaller size. [Type *B. striatopunctata* Steff.]. Palæarctic and nearctic. **Curimopsis**
- 6—Elytral striæ replaced by unimpressed series of shallow detached punctures; integuments virtually glabrous; scutellum very small; clavate setæ forming even single series. [Type *S. spinosa* Rossi]. Palæarctic. ***Syncalypta**

We have no exclusively American genus in this tribe so far as discovered, but *Curimus* Er., and *Syncalypta* Steph., as well as the subgenus *Seminolus* Muls., differing from *Byrrhus* in the broader body and longer antennæ, seem to be confined to the European fauna, the species which we have assigned to *Syncalypta* forming part of the closely allied *Curimopsis* Gangl. My single example of the very small *Syncalypta spinosa* is closely retracted, so that I cannot describe the antennæ.

Cytilus Erichs.

There are probably a number of true species in this genus, but they are so very closely allied among themselves that it is hardly worth while to define some of them as having more than subspecific value. Our forms, as a group, are more elongate or more oblong than the European and the almost hemispherical *sericeus* Forst., does not occur here so far as detectible among my rather extended material. Our species may be briefly described as follows:

Oblong-oval, very convex, black, with feeble blackish-bronze lustre which is more pronounced on the alternately more shining strial intervals, the bronze becoming frequently bright green; under surface black, the legs throughout piceous-black; pubescence above short, close and irregular, very short, cinereous and somewhat even on the pronotum but fulvous and streaming radially in a median basal area; scutellum densely aurato-pubescent, the hairs directed transversely from the median line; elytra with the intervals not more than very faintly alternating in convexity, all virtually flat, alternately dull, densely, finely and evenly sculptured with even prostrate blackish and partly cinereous hairs, and a little broader, more lustrous, less densely sculptured and with the pubescence black and in separated irregular areas, producing a tessellated effect; under surface finely, very closely punctured throughout and with very minute inconspicuous pubescence; head strongly, densely punctate and with very short inconspicuous pubescence; prothorax twice as wide as long, very strongly narrowed from base to apex, with scarcely at all arcuate sides, very declivous and distinctly compressed laterally toward apex, the anterior angles advanced and very acute, the punctures fine, close and even throughout, parted by a fine smooth median line; elytra about a fifth longer than wide, very obtusely rounded at apex. Length 5.2-5.4 mm.; width 3.25-3.4 mm. New Hampshire, Pennsylvania, Canada and Lake Superior. [*Byrrhus alternatus* Say,—J. Ac. Phil. 5, 1825, p. 186; *B. trivittatus* Melsh.,—Pr. Ac. Phil., II, 1844, p. 117]..... **alternatus** Say

A—Similar throughout to *alternatus*, except that the body is slightly smaller and still less broadly oval, with the strial intervals more evidently convex, especially on the flanks, where the punctures of the striae are very much more evident. Length 4.5-5.0 mm.; width 2.8-3.1 mm. California (Truckee and Lake Tahoe).

mimicus n. subsp.

B—Similar to *alternatus* but larger and still more elongate, the elytral flanks perfectly similar and not modified as in *mimicus*; entire elytra frequently vivid green. Length 5.2-6.0 mm.; width 3.0-3.3 mm. Washington State and British Columbia to Colorado; those from the last-named region more sober in coloration.

longulus n. subsp.

Oblong-oval, shorter than *alternatus*, rather dull in lustre, black, without metallic glint; somites similarly formed, the vestiture of the upper

surface short, sparser and less variegated; pronotum with the punctures not quite so small and more separated; scutellum wider than long, triangular, with rounded sides, finely, densely punctate but denuded in the type; elytra similar but shorter, scarcely visibly longer than wide, very minutely, closely punctate, the narrower intervals flat and more opaque, the wider very feebly convex, the striæ laterally not finely and visibly punctate as in *alternatus* but almost impunctate. Length 4.8 mm.; width 3.2 mm. Newfoundland (Codroy, Little River).....*nigrans* n. sp.

Nigrans is founded upon a single specimen, so completely denuded that only very few short hairs remain and these only on certain parts of the elytra, but it differs from *alternatus* or any of its subspecies very decisively in the form of the scutellum, which is longer and more acute in that species, and in the form of the lower margin of the elytra basally, this being strongly arcuate and more protuberant in *nigrans*; it also differs in its shorter form, stronger and less dense pronotal punctures and much less punctate legs.

Byrrhus Linné.

This is the largest genus of the family and in the European fauna consists of two sections, one in which the body is more narrowly oval and the other in which it becomes very broadly oval, larger in size, more roughly sculptured as a rule and with rather longer antennæ—named *Seminolus* by Mulsant and Rey. The first section, or normal *Byrrhus*, is very abundant throughout the colder parts of North America, but *Seminolus* has not thus far occurred here. The numerous species form a difficult study, more because of imperfect condition of the specimens than for any other reason, the vestiture being readily removable in many cases, but especially because it is liable to be damaged or obscured by exuded grease. In addition to this, decided structural differences are almost wanting, the specific criteria consisting for the most part of a limited though recognizable diversity in size and outline or in the arrangement of the vestiture and ornamentation. It is for these reasons that the greater member of described European species are now listed as varieties of a comparatively few more pronounced types. In cases of doubt I have placed some of our own forms in that category provisionally. The majority of the American species conform in general features of structure and ornamentation with the *arietinus* type of the palæ-arctic fauna, though we have also a few peculiar types such as

kirbyi, *pettiti*, *centralis* and *egenus*; those represented in my collection may be defined as follows:

- Form almost evenly oval, sometimes even somewhat pointed behind. . . . 2
 Form very evidently posteriorly inflated, widest near posterior third, the apex very obtusely rounded. 19
- 2—Elytra with black or blackish vestiture, crossed medially by an almost even solid chevron of pale fulvous—or as described by Horn in the Canadian type silvery white—decumbent hairs. Body about two-thirds longer than wide, convex; integuments black, the legs feebly picescent, the tarsi moderately pale; head notably small, closely punctured, the hairs short, moderately numerous: prothorax rather less than one-half as long as its basal width, much more than twice as wide as the head, the sides unusually strongly convergent from base to apex, somewhat sinuate behind the middle, the basal angles very acute; surface finely, densely punctate, the sculpture obscured by the short coarse dense vestiture, which is black, largely variegated with fulvous; scutellum and elytra with the black pubescence irregularly rather denser on the alternate intervals and mingled toward the sides and apex with very short silvery or cinereous hairs; entire under surface densely, asperately and not very coarsely punctate and with very short, not dense cinereous hairs, the legs similarly sculptured and pubescent, the tarsi smooth and shining, with numerous oblique and rather fine pale hairs beneath. Length 8.2 mm.: width 4.8 mm. Indiana. [*B. pettiti* Horn,—Tr. Am. Ent. Soc., 1870, p. 76]. *pettiti* Horn
- Elytra crossed near the middle by two fine transverse and very irregular bands of silvery pubescence, obtusely connected laterally and chiefly traceable by spots on the alternate intervals, the anterior band almost always anteriorly angulate suturally, the posterior irregularly posteriorly arcuate in its general course. 3
- Elytra with the transverse bands very indistinct, wanting or incomplete, but with a common transverse solid sutural spot, near the middle, of whitish pubescence; body rather small in size and more narrowly oval, the general pubescence rather conspicuously variegated. . . . 12
- Elytra without transverse bands or spots, only longitudinally variegated by condensations on the alternate intervals, sometimes apparently not variegated at all. 14
- 3—Larger species, 7 mm. or more in length, apparently a little smaller in *cyclophorus*. 4
- Smaller species, 6 mm. or less in length. 10
- 4—Two transverse elytral pale bands inclosing a subcircular area, which is anteriorly emarginate. Body briefly oval, blackish-piceous, very finely coriaceous, cinereously pubescent; antennæ rufescent, the first and last joints infuscate; elytra with two vittæ of black, which are somewhat interrupted, the common subcircular maculation of the elytra of fusco-æneous squamules. Described thus by Mannerheim from Alaska (Kenai) examples. Length 6.5 mm.; width 4.0 mm. [*B. cyclophorus* Kirby,—Richardson Faun. Bor. Am., IV, p. 117]. *cyclophorus* Kirby

- Two transverse elytral lines inclosing a transversely crescentiform area. 5
- 5—Pubescence of the pronotum short, closely decumbent and but slightly variegated; abdomen finely sculptured. 6
- Pubescence of the pronotum longer or more variegated and more conspicuous. 8
- 6—Abdominal asperities rather close-set and notably strong though fine. Oblong-oval, dark brown in color throughout above and beneath; head very closely and finely chagrined posteriorly, rather coarsely and loosely punctured anteriorly, the hairs short, the transverse impressed line and widely separated ocellæ-like spots distinct; prothorax long, fully one-half as long as the basal width, the strongly converging sides nearly straight; punctures fine and close but distinct, still more minute and very close broadly along the median line, the pubescence short, obscure fulvous, but feebly variegated with silvery spots; scutellum densely clothed with brownish-black hairs; elytra parallel, two-fifths longer than wide, obliquely rounding at the sides in about posterior third, the apex not very broad and transversely rounded; alternate intervals with elongate areas of denser and more blackish-brown pubescence, the anterior broken silvery band narrowly advanced and truncate at the suture; metasternum coarsely, very densely punctato-rugose. Length 9.0 mm.; width 5.4 mm. Lake Superior (Whitefish Point) . . . **brunnescens** n. sp.
- Abdominal asperities not so close-set and very feeble, the general sculpture of that part much more inconspicuous than usual. 7
- 7—Body throughout black, the legs slightly picescent, the tarsi not paler; body rather broadly oval; head sculptured nearly as in the preceding, the transverse impressed line of the vertex very feeble, the widely separated pale spots posterior thereto distinct; prothorax more transverse, much less than half as long as the basal width, the strongly converging sides somewhat arcuate basally; punctures more minute than in the preceding, close-set but even throughout, not closer along the middle; pubescence blackish, with a few silvery hairs at some points; scutellum densely velvety-black; elytra nearly as in the preceding, more elongate and more obtuse behind in the male than in the female, the pubescence black, not wholly concealing the surface except in the dense elongate patches of the alternate intervals, the silvery bands as in the preceding; metasternum closely rugose, becoming not densely punctate posteriorly toward the middle; mesosternal emargination very broad and shallow. Length (σ^7) 8.3–8.8 mm., (ρ) 7.5–8.0 mm.; width (σ^7) 5.0–5.15 mm., (ρ) 4.6–5.0 mm. New Jersey (Atlantic City), Indiana, Iowa and Lake Superior (Bayfield). [*B. americanus* Lec.,—Agassiz, Lake Superior, 1850, p. 224]. **americanus** Lec.
- A—Nearly similar but larger, deep black throughout, the legs not at all and the tarsi but slightly paler; head notably larger, similarly sculptured, except that the transverse central line is shorter, sharper and more arcuate, the pale points very small; prothorax less transverse, almost similarly sculptured, the surface medially becoming more opaque and with the punctures a little finer

though no denser than laterally; scutellum similar; elytra nearly one-half longer than wide, sculptured nearly as in the preceding, the pubescence largely denuded in the type, the apex subevenly and rather strongly rounded. Length 9.6 mm.; width 5.65 mm. New Hampshire.....**neglectus** n. subsp.

- B—Very similar in general form and size to *americanus* but smoother, more piceous in color, the short black vestiture of the pronotum mingled with fulvous and not silvery hairs, the vestiture of the elytra shorter, with similar scattered silvery hairs, especially on the alternate intervals behind the black condensations, but with the space enclosed by the transverse irregular silvery lines containing fulvous and not black hairs, these fulvous hairs forming rather solid blotches; under surface castaneous-brown, the fine asperities of the abdomen sparser than in *americanus*. Length 8.6 mm.; width 5.1 mm. Manitoba (Aweme),—Criddle.

manitobæ n. subsp.

- Body blackish-brown in color, paler rufo-piceous beneath, the legs nearly black, the tarsi but slightly paler; form more elongate and parallel than in the two preceding species; head nearly as in *neglectus* throughout; prothorax also nearly similar, but little less than one-half as long as the basal width, the converging sides becoming feebly sinuate near basal third and not nearly straight throughout as they are in *neglectus*; punctures very fine and close-set, the pubescence short, closely decumbent, not dense, black and but feebly variegated; scutellum densely nigro-pubescent; elytra nearly one-half longer than wide, the sides parallel and straight to well behind the middle, then gradually rounding and converging to the moderately obtuse tip; pubescence blackish but not dense, not concealing the finely, densely chagrined and punctulate surface, except in the denser longitudinal patches of the alternate intervals, the transverse silvery bands as in *americanus*; metasternum densely rugose laterally, closely but clearly, asperately punctate medially, the punctures becoming much finer and still closer medially behind, the median line very finely subimpressed, crossed just behind the middle by a short impressed transverse fossa. Length 8.8 mm.; width 5.0 mm. Labrador (West St. Modest).**imperitus** n. sp.

- Body having almost exactly the same rather narrow subparallel form of *imperitus*, differing in having the head very much smaller in size, the prothorax shorter, distinctly more than twice as wide as long, with the vestiture not quite so short and much less uniform, being variegated by an intricate pattern of pale lines; elytra nearly similar; metasternum not so shining and not having distinctly defined punctures anteriorly but with coarser confluent imbriform rugulation in subtransverse wavy lines; abdomen with the very fine and well separated asperities still finer, the hairs arising therefrom finer, more obscure and much less visible. Length 8.0 mm.; width 4.8 mm. Manitoba (Aweme),—Criddle.....**angustus** n. sp.

- 8—Mesosternal emargination much deeper, its sides becoming almost parallel anteriorly, generally somewhat narrower. Moderately small in size, elongate-oval, black throughout, the legs scarcely,

the tarsi slightly, paler; head rather small, very convex, strongly, very densely punctate throughout, the pubescence short and but slightly variegated, the transverse line and pale spots obsolescent; prothorax evidently less than half as long as the basal width, the very strongly converging sides almost straight; punctures fine but deep, even in size and extremely close; pubescence black, generally forming an elongate medial rhomboid of densely aggregated lines medially, variegated slightly though more sharply with pale fulvous anteriorly and sublaterally and more diffusely elsewhere; scutellum with dense and rather less decumbent black hairs; elytra nearly one-half longer than wide, parallel, the sides rounding through the parabolic tip in posterior third; pubescence close, black, more densely aggregated interruptedly on the alternate intervals, the transverse silvery bands as in *americanus*; abdomen finely but distinctly, closely asperulate, the metasternum more coarsely, deeply and closely asperato-punctate, with a smooth enlargement of the fine impressed median line just behind the middle. Length 7.1-7.25 mm.; width 4.2-4.3 mm. British Columbia. [*B. concolor* Kirby, —Richardson Faun. Bor. Am., IV, p. 117]..... **concolor** Kirby

A—Similar in general to the preceding but stouter and materially larger, similar in coloration and nearly so in sculpture and pubescence; head densely, rather deeply punctate, convex, not densely pubescent except in a small central subprominent aggregation, the impressed line represented by a short transverse flat punctureless spot, the pale points not evident; prothorax similar, except that the fine punctures are not so dense and become notably finer and closer medially; elytra nearly similar throughout; abdomen with the asperities stronger, though less definitely sharp, and sparser, bearing hairs which are a little coarser and distinctly longer than in *concolor*; metasternum more coarsely punctaturogose and without a definite smooth spot on the median line. Length (♂) 8.1 mm.; width 5.0 mm. Washington State.

pacificus n. subsp.

Mesosternal emargination broader, shallow.....9

9—Color deep black, the legs barely at all paler, the tarsi rufo-piceous; head rather well developed, convex, very densely punctured, the pubescence short, notably coarse, somewhat variegated, the transverse line and pale spots obsolete or nearly so; prothorax decidedly less than half as long as the basal width, the converging sides nearly straight, the punctures fine and very close; pubescence notably longer than usual, somewhat shaggy, black, variegated with fulvous, the black hairs forming some uneven condensed lines, the medial rhomboidal figure broad; scutellum densely nigro-pubescent; elytra short, not over a third to fourth longer than wide, rather rapidly rounding posteriorly and obtusely ogival at tip, the general pubescence very short, blackish, sprinkled with silvery, the dense condensations on the alternate intervals, formed of longer deep black hairs, tending to spread into an ill-defined spot at three-fifths and outside the median line, the transverse silvery bands rather finer and more feebly defined than usual; abdomen rather coarsely, densely asperato-

punctate, much more strongly than in the preceding or *americanus*, the metasternum coarsely, densely and rugosely punctate, with a somewhat impressed and partially impunctate post-central area on the median line. Length 7.8–8.4 mm.; width 4.8–5.25 mm. Illinois and Lake Superior (Bayfield). [*B. geminatus* Lec.,—Proc. Acad. Phil., 1854, p. 114]. ***geminatus*** Lec.

Color less deep black, somewhat picescent beneath, smaller in size and more broadly oblong-oval, more acute anteriorly, the head notably smaller, strongly, extremely densely punctate throughout, the impressed transverse line but feebly indicated as a less punctate streak, the pale spots well developed, cuneiform; pubescence very short, inconspicuous; prothorax unusually small, much less than half as long as the basal width, the very converging sides almost straight; surface finely, evenly and extremely closely punctate throughout, the vestiture not long but rather shaggy, black, much variegated with fulvous; elytra barely a fourth longer than wide, distinctly wider than any part of the prothorax, very obtusely ogival or parabolic at apex, densely and finely chagrined, the elongate condensations of black hairs on the alternate intervals widely separated and few in number, without indication of the black spot of *geminatus*, the transverse bands very irregular and formed of fulvous hairs; abdomen very finely, rather closely but feebly asperate, the metasternum rather less coarsely punctured than usual and very densely throughout, a very fine entire median line and the extreme posterior intercoxal angle alone smooth. Length 7.3 mm.; width 4.3 mm. Oregon.

perditus n. sp.

Color deep black, the abdomen feebly picescent and the tarsi piceo-testaceous; antennæ wholly piceo-testaceous, short, the seventh joint but little wider than long, eight to ten transverse; form elongate-oval, convex, the head rather small, convex, deeply, densely punctate, with a fine transverse polished frontal line, the spots posterior thereto not distinct, the vestiture short, dense; prothorax a little less than twice as wide as long, the strongly converging sides feebly arcuate, the punctures fine, deep and close, the fine interstices shining; pubescence moderately long, dense, black, with a conspicuous design of fine pallid lines; scutellum densely nigro-pubescent; elytra fully a fourth longer than wide, parallel and feebly arcuate at the sides, evenly and broadly rounding conjointly in about apical third, very minutely, densely sculptured, but feebly shining, the coarse vestiture mostly black, with blacker condensations on the alternate intervals and sprinkled with silvery laterally, the anterior transverse pale band prominently rounded anteriorly at the suture; under surface densely sculptured throughout, the abdomen finely, rather closely and moderately strongly asperate and with numerous hairs which are fine and rather obscure in coloration. Length 6.8–7.0 mm.; width 3.9–4.0 mm. Manitoba (Aweme),—Norman Criddle.

criddlei n. sp.

Color dark piceous, the legs paler, piceo-rufous, the antennæ entirely rather pale piceo-testaceous, except the blackish basal joint; form much more elongate, narrower and more parallel than in *geminatus*

- and *perditus* with the size materially smaller, more parallel and less convex than in *criddlei*; head moderately developed, densely punctate, the transverse inter-ocular line represented only by its two subfoveiform extremities; prothorax nearly half as long as its basal width, of the usual form but with the median line distinctly canaliculate throughout the length, the punctures everywhere minute and very close; vestiture moderate in length and density, the fulvous hairs predominating and forming a few more condensed lines, two of which inclose an irregular median rhomboid; scutellum with dense brownish-black hairs; elytra nearly one-half longer than wide, parallel, with feebly arcuate sides, the latter rounded and converging in apical third to the obtusely sublobiform apex; pubescence short, coarse, not dense, dark brown, but little variegated by darker condensation on the alternate intervals, the crescentiform area inclosed by very feebly defined pale fulvous spots and unusually large, its sutural length two-fifths as long as the suture; abdominal asperities small but strong, moderately close. Length (♂) 7.0 mm.; width 3.9 mm. Labrador (Nain).....**torpidus** n. sp.
- 10—Abdomen strongly, closely and very confusedly punctato-rugose, the basal segment coarsely punctate medially. Form more narrowly oblong-oval, not very deep black throughout; head moderately developed, convex, strongly, densely punctate, the transverse line and pale spots obsolescent. the pubescence rather abundant, coarse, fulvous and black, conspicuous; prothorax evidently less than half as long as the basal width, the sides only moderately converging and nearly straight, the punctures small but deep and perforate, becoming gradually somewhat smaller and closer medially, the surface everywhere rather shining, the vestiture rather coarse, variegated; scutellum densely nigro-pubescent; elytra rather more than a fourth longer than wide, parallel, almost evenly rounding in about apical third, the short vestiture rich dark fulvous in color, the alternate intervals with dense and more blackish vestiture, the two inner vittæ scarcely at all broken; metasternum strongly, densely punctate throughout, except a small elongate smooth spot on the median line just behind the middle, the median smooth line not indicated; mesosternal sinus shallow. Length 6.0 mm.; width 3.5 mm. Oregon.....**callidus** n. sp.
- Abdomen with fine and more distinct asperate punctulation, the basal segment never more than rather finely punctate medially; form much more broadly oval.....11
- 11—Form rather short, oblong-oval, very convex, black, the under surface and legs just visibly picescent; head rather small, convex, densely punctate, inconspicuously pubescent, the transverse line obsolete but with three small shining spots in short transverse line between the eyes; prothorax formed nearly as in the preceding and with rather long black vestiture, which forms a few linear aggregations, the medial elongate rhombus distinct, the paler hairs very few and inconspicuous, the punctures fine and dense; elytra about a fifth longer than wide, parallel and feebly arcuate at the sides, very obtusely rounded in about apical third, the hairs abundant, almost entirely black, the

black condensations of the alternate intervals narrow and not contrasting so greatly as in the preceding, the transverse pale lines extremely feebly defined, the hairs forming the spots scanty, densely punctate; metasternum with a fine smooth and even median line, the mesosternal sinus shallow. Length 5.8 mm.; width 3.7 mm. Wyoming (Laramie) and Manitoba (Aweme)... *laramiensis* n. sp.

Form nearly as in the preceding but still stouter, deep black throughout, the legs not distinctly picescent; head nearly as in the preceding throughout but with still shorter, blacker and less evident pubescence; prothorax nearly similar in form and sculpture but rather larger, with the pubescence notably shorter, more even and scarcely at all variegated, the black pairs scarcely at all linearly aggregated; elytra slightly more than a fifth longer than wide, nearly as in the preceding but with the black pubescence shorter, scantier and with the condensations on the alternate intervals much less marked and less prominent, the transverse silvery bands feeble, irregular, the figure inclosed being much more than twice as wide as long; asperulate punctures of the abdomen very fine but distinct, well separated among themselves, each bearing a very short but unusually thick yellowish-silvery glistening hair, the closely and rugosely punctured metasternum similarly clothed; mesosternal sinus rather deep, only a third as wide as the anterior margin of the mesosternum. Length 6.0 mm.; width 3.85 mm. Wisconsin (Bayfield),—Wickham.

rigens n. sp.

12—Elytra with a transverse figure, formed by nearly similar transverse bands, sinuate posteriorly. Oval, subacute anteriorly and posteriorly, convex, black, the pubescence olivaceous, the pronotum variegated with cinereous; elytra subtessellate with black and cinereous, with a pale transverse maculation crossing the suture near the middle; antennæ and tarsi rufo-piceous, the former with the last joint subacuminate. Length 5.5 mm. Lake Superior (northern shore). [*B. eximius* Lec.,—Agassiz, Lake Superior, 1850, p. 224].

eximius Lec.

Elytra with a very indistinct closed transverse crescentiform space, the transverse bands fine, very incomplete but of the same nature as in *americanus*, the anterior sutural part slightly more distinct. Elongate-oval, parallel, black, the tarsi rufo-piceous; head well developed, moderately convex, strongly, very densely punctate, with a mixture of blackish and fulvous, very coarse hairs and a fine impunctate transverse submedial line; prothorax of the usual form, finely, deeply, densely punctate, the pubescence unusually long, coarse, fulvous and blackish, much though indefinitely variegated; scutellum densely clothed with black and a few fulvous hairs; elytra fully a fourth longer than wide, very obtuse at apex, parallel or perhaps very faintly posteriorly inflated, the sides nearly straight in basal two-thirds; pubescence not very short, coarse, bright fulvous-yellow and blackish indiscriminately mingled, the alternate intervals with elongate areas of more condensed blackish hairs; abdomen shining, finely but strongly, closely, asperately punctate, the hairs very short, fine and inconspicuous; metasternum strongly,

closely punctate, with a fine impressed median line in posterior half. Length (♂) 6.3 mm.; width 3.75 mm. Colorado (Leadville),—Wickham.....**canterius** n. sp.

Elytra without a closed common crescentiform figure; outline more elongate.13

13—Form elongate-oval, more produced and pointed posteriorly than anteriorly, black throughout, the antennæ black with a feeble piceous tinge; head rather coarsely, very deeply and densely punctate, with rather coarse pubescence which is slightly variegated; prothorax distinctly less than half as long as its basal width, the strongly converging sides somewhat swollen and arcuate basally, compressed anteriorly, the punctures minute, deep and very dense, the pubescence longer than usual, very coarse, black, much variegated by aggregated lines and patches of fulvous, the scutellum with coarse, dense, almost wholly black hairs; elytra one-half longer than wide, parallel, the sides feebly arcuate, becoming gradually rounded and converging in apical two-fifths, the apex rather narrowly parabolic and somewhat produced; surface extremely densely opaque, the hairs coarse, black, interspersed plentifully with fulvous, with a small transverse solid transverse spot of yellow-cinereous hairs at the middle of the suture and a small one at each side in nearly the same line, at about lateral third; alternate intervals with denser, almost wholly black hairs; abdomen strongly and closely but somewhat finely asperate, the metasternum more coarsely, very densely and rugosely punctate, the hairs very short but rather coarse, well separated. Length 6.3 mm.; width 3.5 mm. Idaho (Cœur d'Alene),—Wickham.**centralis** n. sp.

Form nearly similar but less produced and more evenly rounded behind, smaller in size, almost similar in coloration and general nature of the variegated vestiture; head small, convex, very densely punctate; prothorax nearly as in *centralis* but less compressed apically and with less minute and not quite so dense sculpture, the vestiture nearly similar; elytra not more than a third longer than wide, parallel and feebly arcuate at the sides, the latter evenly and more broadly rounding behind from well behind the middle; surface less densely punctate and slightly shining, the vestiture rather shorter, coarse, black, with interspersed fulvous hairs, the alternate intervals with shorter black condensations, the fulvous hairs tending to form several posteriorly arcuate transverse common bands, the solid yellowish spot at the middle of the suture transversely rhombiform; abdomen similarly but less densely asperate. Length 5.3 mm.; width 3.0 mm. Colorado. (Leavenworth Valley,—10000 to 11000 feet elevation),—Wickham.**explicatus** n. sp.

14—Elytral striæ as usual, fine but continuous.....15

Elytral striæ very feeble, discontinuous, sometimes much interrupted. . 18

15—Form stout, oblong-parallel or very nearly parallel, very broadly obtuse behind.16

Form parallel and oblong-elongate, obtusely rounded behind, much narrower and smaller in size.....17

16—Deep black throughout, the antennæ black, picescent toward base



of the funicle; head well developed, densely, rugosely punctate, the transverse line and two spots very feeble; pubescence brown but inconspicuous; prothorax of the usual form, distinctly less than half as long as the basal width, feebly compressed anteriorly, the sides from above very feebly arcuate basally; surface evenly convex, alutaceous, the punctures even, small, deep and perforate, separated by nearly twice their own widths; scutellum with dense, coarse, brownish-black hairs; elytra a little wider than the prothorax, only a fifth longer than wide, the parallel sides feebly arcuate, the apex very broadly rounded in posterior third; surface dull, minutely, closely punctate, the pubescence short, not dense, wholly pale fulvous, with a few silvery hairs intermingled, longer and dense along the middle of the alternate intervals in detached lines and spots; abdomen shining, with very fine, feeble and well separated asperities, the metasternum in great part strongly punctato-rugose, the pubescence of the under surface fine, very short and inconspicuous; emargination of the mesosternum broad and shallow. Length 7.6-8.0 mm.; width 4.7-5.0 mm. Oregon. **fulvovestitus** n. sp.

Deep black, slightly narrower and still more parallel, the pubescence very coarse and unusually long; head with the dense sculpture finer, the pubescence more conspicuous, pale brown and cinereous; prothorax nearly similar in outline but with the fine perforate punctures everywhere much denser, the vestiture rather long, coarse, decumbent, dense and almost unicolorous, pale yellowish-brown; scutellum with coarse, dense, rather darker brown hairs; elytra just visibly widest at about posterior third, basally not distinctly wider than the prothorax, the sides nearly straight, the apex very broadly rounded in posterior third; minute punctures very dense, the vestiture long, dense, coarse, pale yellowish-cinereous throughout, except on the alternate intervals where it becomes still longer, denser, still more heaped up and darker brown in detached spots, which are small in size and irregular in form; abdomen strongly, closely asperato-rugulose, with rather close-set and coarse, subfulvous hairs, longer and much more conspicuous than in *fulvovestitus*, the metasternum closely, coarsely and distinctly though rather roughly punctate, the mesosternal sinus deeper than in the preceding. Length 7.7 mm.; width 4.7 mm. Washington State (Palouse).

stolidus n. sp.

17—Elongate, parallel, deep black, the tarsi piceous-black; head rather finely, very densely sculptured, the transverse line represented by its impressed ends and a small median smooth point, the pubescence moderate; prothorax scarcely less than half as long as its basal width, of the usual form, feebly shining, the perforate punctures moderately fine and close, separated by but little more than their own widths, becoming extremely fine and much closer medially and rather notably coarse and closer on the very steep flanks; pubescence short, pale fulvo-cinereous, largely denuded in the type; scutellum with dense, radiating, coarse dark fulvous hairs; elytra oblong, a fourth longer than wide, scarcely wider than the prothorax and only about two and one-half times as long, very

broadly rounded behind in apical third; surface opaque, extremely finely, densely chagrined throughout, the punctures not distinct; vestiture very short, not very dense, almost perfectly even in distribution, fulvous in color, becoming faintly cinereous on the flanks; abdomen shining, finely, feebly and not very densely asperulato-rugulose. Length 6.8 mm.; width 3.85 mm. New Hampshire (near the summit of Mt. Washington).....*difficilis* n. sp.

- 18—Very broadly oblong-oval, rather shining throughout above and more so beneath, deep black throughout; head closely, deeply, distinctly and densely punctate, the anterior margin tumid, and, immediately behind the ridge, transversely impressed, the impression broadly interrupted at the middle, the central short transverse line impressed and evident; prothorax not quite half as long as the basal width, of the usual form, the punctures very fine, deep, even throughout and extremely close-set, separated generally by less than their own widths; pubescence denuded in the type, except a few short pale hairs on the flanks; elytra evidently wider than the prothorax, only a fifth or sixth longer than wide, parallel, very broadly, circularly rounded in about apical third; surface finely but very distinctly, evenly and closely punctured throughout, irrespective of the stria intervals, the latter not differing at all among themselves, the striæ fine, consisting of irregular series of fine linear detached portions, becoming more nearly entire and stronger on the flanks; pubescence wholly denuded in the type, except a few very short silvery hairs along the lower part of the flanks; abdomen finely, closely and rather strongly asperate, the metasternum with only moderately large and well separated punctures which are rugosely confluent laterally, the mesosternal sinus shallow. Length 6.9 mm.; width 4.3 mm. British Columbia (Donald),—A. G. Smith.

egenus n. sp.

- 19—Form stout, inflated posteriorly, blackish-brown in color, very dull in lustre, the tarsi rufo-piceous, the antennæ dusky testaceous, the basal joint black; head finely, very densely punctato-rugose, the median part posteriorly somewhat elevated and deplanate, the vestiture very short, abundant and coarse; prothorax longer and narrower than usual, fully half as long as the basal width, of the usual form, the punctures small but deep and extremely dense throughout; pubescence rather short, coarse, dense, brownish-black, slightly variegated with a few small cinereous hairs, the darker hairs also aggregated into a few irregular lines; scutellum densely, coarsely pubescent, brownish-black; elytra barely a sixth longer than wide, at base scarcely, behind the middle much, wider than the prothorax, very broadly and obtusely rounded behind, the sides anteriorly nearly straight; pubescence very short, dense, coarse and dark fulvous, condensed into more blackish vittæ on the alternate intervals and with a transverse blackish spot posteriorly toward the sides, the transversely lunate figure rather short, composed of silvery-white spots, the anterior line anteriorly angulate medially; punctures minute but distinct, everywhere extremely dense; abdomen finely, closely and rather strongly asperate. Length 7.8 mm.;

width 4.75 mm. Lake Superior. [*B. picipes* || Kirby,—Richardson, Faun. Bor. Am., IV, p. 116; *B. kirbyi* Lec.,—Pr. Acad. Phila., 1854, p. 114].....**kirbyi** Lec.

Form stout, less inflated behind but almost similar though much smaller, deep black above, piceo-rufous beneath; head nearly similar but less parallel behind the eyes, very densely sculptured, the posterior subelevated flattened area indistinct; prothorax much shorter, distinctly less than half as long as the basal width, of the usual outline, the punctures less minute than in *kirbyi* but almost equally dense, the narrow interspaces more shining, the vestiture rather longer, coarse, blacker, aggregated into a few more prominent streaks and slightly variegated with small fulvous areas; scutellum relatively larger, densely clothed with coarse and deep black hairs; elytra similar in general form though not quite so inflated posteriorly, equally broadly rounded behind, the surface opaque, with extremely dense, minute and scarcely distinguishable punctures, the vestiture short, dense, not fulvous but blackish-brown, largely interspersed with single silvery hairs on the flanks, with condensed black vittæ on the alternate intervals, the second and third transversely united near basal third of the elytra, the transverse black subposterior spot toward the sides transverse; lunate inclosure in the type very indistinct, marked principally by more even short pubescence than the rest of the surface, the defining spots very minute, sparse and composed each of a very few yellowish-cinereous hairs; entire under surface very closely punctate and asperate, with the hairs short but coarse, close and conspicuous. Length (♂) 6.5 mm.; width 3.8 mm. Colorado (Leadville),—Wickham.....**vafēr** n. sp.

Form much more elongate than in either of the two preceding, though very sensibly inflated posteriorly, black throughout, the tibiæ and tarsi and sometimes the under surface very feebly picescent; head almost evenly convex, strongly, very densely punctate and with short, close and very coarse hairs, the two ocellæ-like spots distinct but black, observed under high power to be impunctate but finely, feebly chagrined; prothorax well developed, distinctly less than half as long as the basal width, somewhat compressed apically, the sides thence broadly diverging and feebly arcuate to the very acute basal angles; surface finely but distinctly, deeply, very closely punctate, with shining thin interspaces, the pubescence rather long, black, with indistinctly fine aggregated lines and very slightly variegated with cinereous; scutellum densely velvety-black; elytra about a fourth longer than wide, evenly, subcircularly rounded behind in barely apical third, the surface finely, very densely punctate, the short blackish-fulvous pubescence abundant, the blacker aggregated vittiform areas smaller, fewer and much less evident than in the two preceding, the subposterior lateral black area evident, the enclosed transverse lunate area very indistinct, in the form of an almost even chevron, the defining spots of cinereous hairs small, sparse and evanescent; under surface dull, very densely sculptured throughout and covered rather closely with short and only moderately coarse

plumbeous hairs. Length 6.6–7.2 mm.; width 3.7–4.2 mm. Idaho (Cœur d'Alene),—Wickham..... *wickhami* n. sp.
 Form and general characters nearly as in *wickhami* but larger and stouter, still less evidently inflated posteriorly and much less so than in *kirbyi*, deep black throughout, the under surface and legs not paler; upper surface nearly as in *wickhami* throughout, except that there is a notable admixture of fulvous hairs that do not appear in that species, especially noticeable on the pronotum and toward the sides and on the posterior slope of the elytra; vestiture throughout a little longer and coarser than in *wickhami*; under surface similarly very densely and strongly sculptured throughout and with the numerous short fulvo-cinereous hairs coarse and conspicuous; punctures of the metasternum distinctly more isolated among themselves than in the preceding species. Length 7.7 mm.; width 4.7 mm. British Columbia (Aldermere),—communicated by Mr. Keen.
consuetus n. sp.

Most of the species proposed above seem to be very well defined and not subject to much doubt,—that is, if the limits of variability disclosed in those few instances where it has been possible to study series of specimens hold true for all. The longitudinal distance separating the irregular transverse pale bands of the elytra is rather variable as a rule, and whether those forms given in the table as wholly unfasciate are constantly so or not cannot be conjectured, though this would seem to be highly probable. *Neglectus* is without much doubt a valid species, distinct from *americanus*, but my single specimen is in very poor condition, being almost entirely denuded; possibly *brunnescens* may be a subspecies of *americanus* rather than *neglectus*. The transverse subposterior lateral black spot so characteristic of the posteriorly inflated *kirbyi* section, is also evident in *geminatus*, and, besides the more developed pubescence, this species is distinguishable from *americanus*, which it otherwise much resembles, by the stronger and denser abdominal sculpture. *Egenus* is a very aberrant species and it is unfortunate that my only specimen, as in the case of *Cytilus nigrans*, should be almost completely denuded and bald on the upper surface throughout, as the pubescence would doubtless have a different type-form from that prevailing elsewhere. *Perditus*, represented by two mutually similar examples, is a peculiar species, having an unusually small head; I have placed with it two other forms which evidently differ, but which are rather too indefinite or too imperfect to describe; one, unlabeled in the Levette cabinet, represented by two

specimens, is more broadly oval, has a larger head and much stronger, denser abdominal sculpture, the other is labeled California. *Concolor* Kirby, given as a synonym of *cyclophorus* in the Henshaw list of Coleoptera, has no such status, being a perfectly distinct species.

Porcinolus Muls.

The type of this genus, *murinus* Fabr., is a small species, much inferior in stature to the smallest *Byrrhus*, with which it was confounded by Melsheimer and LeConte, possibly because of the somewhat similar style of ornamentation; it is more properly associable with *Curimus* and *Syncalypta*, as shown by the short erect bristles of the upper surface, among other features. The first of the two following species differs from *murinus* chiefly in its larger size, very much more broadly rounded outline and longer and more conspicuous erect bristles; the second is more like *murinus* but has longer erect bristles and relatively very much more elongate elytra:

Form very broadly, evenly elliptical, convex, black, the legs feebly rufopiceous; erect bristles of the upper surface claviform, very numerous. Irregularly but evenly distributed and about half as long as the width of the scutellum; head evenly convex, very densely and rugosely punctate, with a smoother transverse line at the middle of the vertex, the pubescence very short, coarse and close; prothorax slightly less than half as long as its basal width, in outline as in *Byrrhus*, extremely minutely, subsperately and not densely punctate, the general surface shining where exposed, the pubescence short, coarse, dark and sublineate in part, much variegated with paler; scutellum densely nigro-pubescent; elytra scarcely at all longer than wide, with arcuate sides, gradually converging from slightly behind the middle through the narrowly rounded apex; surface very finely and simply striate, densely clothed with short, coarse, dark cinereous hairs, becoming broadly condensed and blackish along the alternate intervals and with a transversely lunate common area, inclosed by broad and somewhat broken lines of confluent spots, formed by pale cinereous hairs, the two lines uniting at lateral fourth and basal third; abdomen finely, feebly, not densely sculptured basally, becoming very coarsely, densely and rugosely so apically, the sutures all very coarse and deep; metasternal punctures well separated medially, dense laterally. Length 4.25 mm.; width 3.0 mm. Kansas (Baldwin). **crensentifer** n. sp.

Form narrower than in the preceding and smaller in size, very evenly oval, more nearly like the European *murinus* but with much longer and rather more numerous erect claviform bristles, deep black throughout, the punctures of the head and pronotum rather coarse,

moderately separated, with the interspaces where visible polished and without minute sculpture, the elytra with fine striæ, the broad flat intervals smooth, polished and almost punctureless, the entire upper surface very densely clothed with short, coarse, subsquamiform hairs, with conspicuous blackish bristles interspersed, the vestiture generally blackish, with condensed black vittæ on the alternate intervals of the elytra, the latter also with a transversely lunate area inclosed by pale bands nearly as in the preceding; prothorax rather short; elytra notably long, three and one-half times as long as the prothorax, evenly elliptic in outline; under surface, with coarse, close sculpture, the metasternum with the coarse transverse punctures coalescent anteriorly but isolated posteriorly, the rather slender erect stiff hairs of the abdomen attached each at the posterior margin of a flat tubercle, the latter large and strong throughout on the last segment, giving an eroded appearance, the tubercles moderately separated, the interspaces granulato-reticulate. Length 3.7-3.8 mm.; width 2.25-2.3 mm. Manitoba (Aweme),—Norman Criddle *hystrix* n. sp.

In the European *murinus*, as represented by a German specimen at hand, the abdominal sculpture is stronger and denser throughout and the hairs of the under surface are shorter, more decumbent and more squamiform than in either of the above species; the bristles of the upper surface are less numerous and scarcely more than half as long. The dimensions of this European example are 3.7×2.3 mm., which coincide very nearly with the proportional dimensions ($2\frac{1}{5} \times 1\frac{1}{3}$ l.) given by Melsheimer (Pr. Acad. Phila., 1844, p. 117) for his *Byrrhus undatus*, of which *glabellus* Mels. (l. c., p. 118) is a synonym—both described as Pennsylvanian. If *undatus* Mels., is really the same as *murinus* Fabr., the latter will have to be listed in our catalogues, but not having seen a specimen I am unable to decide; *undatus* and *glabellus* may possibly have been founded upon accidental importations, which failed to establish the species here, though the genus *Porcinolus* is not only endemic, as indicated by the two quite different species above described, but is probably much more developed here than in Europe. Possibly *hystrix* may be the same as *undatus* Mels., but of this I have no means of judging.

Curimopsis Gangl.

The species of this genus inhabiting North America are recorded in our lists under the name *Syncalypta*, and, though placed as a subgenus of the latter in the European catalogue, I think the differences are sufficiently pronounced to compel its recognition

as a distinct genus. Although very poorly represented in our collections, this is probably not so much because of rarity as it is owing to their obscure coloration, the frequent coating of earthy matter and the habit of feigning death very persistently. My collection includes only three specimens, representing three different species. The six species known may be defined as follows:

Outline regularly oval in form.....2
 Outline oblong-suboval, more parallel and subrectilinear at the sides medially.....4

2—Elytra with many small distinct spots of condensed silvery scale-like pubescence. Oval, attenuated before and behind, convex, black, fusco-squamulate, hispid with erect blackish-piceous bristles, which are shorter and less numerous than usual; head and prothorax densely punctate, the latter more coarsely and densely than in *echinata*; elytra with fine striæ, the sutural posteriorly and the external deep. Length 2.75 mm. Washington State,—Ulke. One specimen. [*Syncalypta albonotata* Lec.,—Proc. Acad. Phila., 1861, p. 344].

albonotata Lec.

Elytra diffusely variegated with larger, more irregular patches of pale squamiform decumbent hairs.3

3—Form broadly oval, pointed behind, convex, rather shining, the condensed patches of paler squamiform pubescence more distinct posteriorly, black, the erect bristles long, blackish and numerous; head and prothorax rather coarsely, moderately closely punctate, the elytra not longer than wide, rather acutely rounded and feebly lobate at apex, the striæ faintly impressed, obsolete and formed of series of widely spaced punctures except posteriorly and laterally, converging toward the more impressed sutural posteriorly as in *Simplocaria*: surface finely, remotely punctate and shining; under surface shining, with rather coarse, well spaced, perforate punctures which are smaller on the duller abdomen. Length 2.3 mm.; width 1.6 mm. District of Columbia. [*Simplocaria strigosa* Mels.,—Proc. Acad. Phila., 1844, p. 118—Georgia].....**strigosa** Mels.

Form more elongate, evenly oval, convex, black, dull in lustre, the erect bristles long, claviform, numerous, seriate in arrangement; head and prothorax with only moderately coarse, rather close-set punctures; elytra fully a fifth longer than wide, the sides evenly rounded and gradually converging posteriorly from near the middle, the apex rather acute; surface closely, coarsely punctato-scabrous throughout, the striæ fine and distinct to the base, the sutural strong posteriorly, the others not so directed upon the sutural posteriorly as in *strigosa*, the patches of denser squamiform decumbent hairs more distinct and visible throughout though confused; under surface duller, the punctures rather fine and close-set. Length 2.4 mm.; width 1.6 mm. Lake Superior (Marquette and Eagle Harbor). [*Syncalypta echinata* Lec.,—Agassiz, Lake Superior, p. 224].

echinata Lec.

- Form briefly oval, smaller in size, convex, black throughout, fusco-squamulate, not maculate, interspersed with longer erect black claviform bristles; prothorax feebly compressed anteriorly at the sides; elytra subequally striate, the sutural stria somewhat deeper posteriorly. Length 2.0 mm.; width 1.5 mm. Alaska (interior of the Kenai Peninsula—a single specimen). [*Syncalypta setulosa* Mann.,—Bull. Mosc., 1853, p. 216]. **setulosa** Mann.
- 4—Ovate, convex, more pointed behind, the sides of the elytra parallel from the base to beyond the middle, black, densely clothed with brownish-gray scales and but slightly mottled; bristles rather long, clavate as usual. Length 2.5 mm. Colorado (Garland). A single specimen. [*Syncalypta grisea* Lec.,—Bull. U. S. Geol. and Geog. Surv., 1879, V, p. 514]. **grisea** Lec.
- Oblong-oval, black, the surface with an incrustation of dark foreign matter but shining where exposed, the bristles claviform, numerous, moderate in length, fuscous and somewhat unevenly serial in arrangement; prothorax relatively unusually short, with moderately large and not very dense punctures, the converging sides rather strongly arcuate; elytra fully a fourth longer than wide and much more than three times as long as the prothorax, the sides gradually converging and rounded behind to the notably acute apex, the striae visible and sensibly impressed throughout, the dark crust concealing any possible maculation of condensed scales, the surface where exposed scarcely at all punctured, smooth and shining; under surface moderately shining and with rather small, somewhat close-set, deep punctures. Length 2.5 mm.; width 1.5 mm. Washington State. A single specimen. **brevicollis** n. sp.

Melsheimer gave a short and very insufficient diagnosis (Proc. Ac. Phila., 1844, p. 117) of a "*Syncalypta hispidus*" (!) as castaneous, fusco-hispid, the antennæ and feet red-brown; head blackish, somewhat wrinkled, very finely and distantly punctured; prothorax punctured like the head; elytra darker than the prothorax, glossy, with very fine vicinal punctures; under surface glabrous. Length 3 mm. Pennsylvania. This is not alluded to by LeConte in his synopsis of the Byrrhidae (l. c., 1854, p. 113) and I do not know whether or not it has ever been identified; it is certainly not a member of the present genus. The lack of agreement of the specific word in gender would lead one to suppose that the author had originally assigned it to some other genus and had failed to change the gender ending.

Tribe EXOMINI.

This tribe seems to be necessitated by a minute species, representing a local development peculiar to the northwestern coastal region of North America; its aberrant features concern principally

the mesosternal and epipleural structure, as well as the deeply sulcate elytra.

Exoma Csy.

The body is very small in size, strongly convex, of a generally oblong-oval form, more acute behind. The head has the clypeal suture wholly obsolete, the anterior margin evenly arcuate, with the edge thin and slightly reflexed, the antennæ nearly as in *Curimopsis*, the 3-jointed club being gradually broader from its base; the mesosternal pit occupies the entire intercoxal portion of the mesosternum; the abdomen is relatively rather small, with distinct, equal and perfectly transverse sutures. The epipleura are broad anteriorly and but slightly hollowed at base for the retracted legs; at the posterior limit of the metasternum they terminate abruptly, the marginal line extending obliquely upward—as seen by lateral view—as well as outward and thence posteriorly wanting, being coincident with the lower elytral edge. This structure of the epipleura, the broad anterior part ending abruptly behind in a truncature, recalls that of *Trinaria* as described before, but in that genus the edge of the elytra posterior thereto is in the same line as the anterior outer edge and is not superior to it in plane as it is in *Exoma*. The legs are retractile but not so strongly as in the preceding tribe, resembling more nearly the *Simplocariini* in this respect. The scutellum is notably small and rather convex and the deep, equal and entire elytral sulci have no tendency to join the sutural before the apex as they do in *Simplocaria* and *Curimopsis*. The single species is the following:

Moderately stout, very convex, strongly shining throughout, black, the prothorax slightly, the legs pale, testaceous; head smooth, finely, sparsely punctate, the sparse setæ short, recurved and squamiform; prothorax twice as wide as long, the strongly converging sides sensibly arcuate from above; surface smooth and polished, with remote and minute subasperate punctules, each bearing a rather short coarse and stout recurved seta; scutellum very small, much longer than wide, very acute, convex and nude; elytra barely as long as wide, as wide as the prothorax, widest, somewhat inflated and with rounded sides near basal third, thence rapidly narrowed and with more feebly arcuate sides to the rather acutely rounded apex, very steeply declivous posteriorly; sulci very coarse and deep, the intervals convex, smooth and polished, each bearing a single series of short stiff palish hairs, which are coarse and so strongly curved that their tips are nearly bent back upon the surface, forming a semi-

circle; each is attached in a minute and scar-like, feebly asperate punctule; abdomen micro-reticulate but not distinctly punctate, with some scattered hairs; metasternum short, with some rather coarse, moderately close punctures; its anterior margin, along the mesosternal pit, elevated and cariniform. Length 1.5-1.6 mm.; width 0.9-1.0 mm. British Columbia (Metlakatla),—Keen. [*E. pleuralis* Csy.,—Can. Ent., 1908, p. 282]. **pleuralis** Csy.

In my original description the language "free though retractile," in referring to the legs, is intended to mean that the anterior legs when retracted are not deeply sheltered as they are in the preceding tribe and especially in *Curimus*, *Syncalypta* and many other types, being in fact more like those of *Simplocaria*.

Subfamily LIMNICHINÆ.

The radically different method of protecting the antennæ in repose is an ample reason for treating the numerous very small species of the *Limnichus* group as a subfamily, instead of a simple tribe; but there are other important reasons also, such as the different habits and the generally distinct epistoma or clypeus. There are two tribal groups included within the scope of the definition previously given for the Limnichinæ, which may be defined as follows:

- Pronotum without cavities for the antennæ in repose; antennæ with the funicle comprising joints three to six or eight very slender and cylindrical. LIMNICHINI
 Pronotum with polished sublateral cavities for the shelter of the distal parts of the antennæ in repose; antennæ stout basally, thence gradually tapering to the neighborhood of the club; body very minute.
 BOTHRIOPHORINI

The second of these two tribes consists at present of but few species, while the first includes numerous species as well as many genera. Both tribes are native to the palæarctic and nearctic faunas and the Limnichini extend at least as far to the southward as Panama.

Tribe LIMNICHINI.

The numerous genera of this tribe, which is more developed and diversified in the new than in the old world, may be differentiated readily as follows:

- Antennæ not partially sheltered in repose within posterior cephalic depressions, but usually placed in close contact with the sides and base, sometimes apparently free; pubescence forming a single system; epistomal suture very fine and feeble to obsolete, never groove-like. . . 2

- Antennæ partially sheltered in repose in slight sublateral basal depressions on the upper surface of the head and slightly under the anterior edge of the pronotum, blackish and dense in substance, the club gradual, rather compact and 3-jointed; eyes vertical in plane; pubescence dual, consisting of very short appressed hairs, with others longer and more erect intermingled; elytral punctures generally somewhat serial basally; epistomal suture rather coarse and sulciform. 7
- 2—Eyes very convex and prominent, rather coarsely faceted and conspicuously visible from a vertical viewpoint, the sides of the front above them not acute or cariniform; anterior part of the front abruptly more declivous, subvertical, the very coarse sculpture obliterating the epistomal suture; antennæ inserted within open foveæ at the ends of the epistomal suture before the eyes, the base not concealed from above; prosternum sulcate; sculpture of the body coarsely cribrate as a rule. [Type *Limnichus punctatus* Lec.]. Nearctic to neotropical.

Limnichites

- Eyes vertical in plane and more or less finely faceted, the edges of the front above them acute and projecting, almost wholly concealing them from a vertical viewpoint; upper surface of the head more gradually declivous anteriorly. 3
- 3—Antennæ blackish and denser in substance; surface sculpture more pronounced as a rule, the body generally less attenuate posteriorly. 4
- Antennæ fragile, paler, apparently free, the club long and very loose; prosternum sulcate; body more acutely pointed behind. 6
- 4—Prosternum sulcate; sculpture of the front usually strong and longitudinally coalescent, generally obscuring or obliterating the epistomal suture, the epistoma transverse, broadly rounded; antennæ with the outer joints closely joined, truncate, the last joint large, inserted under the oblique acute sides of the front, the base concealed from a dorsal viewpoint, the emarginations indicating the ends of the epistomal suture very small; body rather obtuse behind, with moderate sculpture. [Type *Limnichus obscurus* Lec.]. Nearctic and Sonoran. **Eulimnichus**

- Prosternum not at all sulcate; sculpture rather feeble, that of the head not conspicuous, the epistomal suture fine but evident, the epistoma broadly rounded; antennæ inserted within large sinuses before the eyes and behind the lateral part of the epistoma, their base not concealed from above, much longer and more loosely articulated than in *Eulimnichus*, the outer joints much less rapidly and usually only feebly enlarged, with the apices of the joints acuminate and not truncate; body more pointed behind as a rule 5
- 5—Acute side margins of the prothorax ending anteriorly in a rather prominent angle at some distance behind the apex, the sides thence to the apex obtusely rounded in section and not produced; hypomera with a broad flat and slightly elevated inner margin; epistomal suture very fine but evident, slightly tumescent; epistoma thickened at the sides. [Type *Limnichus versicolor* Watl.]. Palæarctic.

***Pelochares**

Acute side margins of the prothorax continuous to the apex, the latter somewhat produced and rather finely acute from a dorsal viewpoint; hypomera without trace of the inner flat margin of *Pelochares*, continuous to the suture separating it from the prosternum and its epipleura; groove along the elytral side margins finer; epistomal suture extremely fine and feeble, barely evident, the epistoma not at all thickened laterally; antennæ of the same general type but with the outer joints less elongate, with their apical prolongations less acute. [Type *L. tenuicornis* Csy.]. Nearctic of the Pacific coast. **Lichminus**

6—Antennæ very pale yellow, the first two joints thick, third to eighth slender, the last three slender and elongate-oval, loosely connected, pubescent; body ovate, somewhat as in *Atomaria*, sparsely clothed with short and erect recurved hairs. [Type *P. atomarius* Shp.]. Neotropical. ***Phalacrichus**

Antennæ pale, slender, the first two joints larger, the second transverse and somewhat oblique, third to sixth slender and cylindrical, the third and fourth the shortest, the outer five joints forming a long slender compressed and very feebly and gradually enlarged club, with the joints fully as wide as long, broadly truncate at tip and bristling with long hairs, the eleventh rounded; body ovate, pointed behind, sparsely clothed with short recurved hairs; converging sides of the front before the eyes acute and unbroken, concealing the antennal insertion from above, the epistomal suture very fine but evident, sinuate; posterior trochanters angulate. [Type *L. colonica* n. sp.]. Neotropical. ***Limnichalia**

7—Prosternum broader, evenly convex; antennæ inserted in small exposed lateral foveæ just behind the lateral part of the epistoma and not far in advance of the eyes, the sides of the front without the prominent edge of the preceding genera and with a large transverse impression just behind the antennæ; scutellum elongate and very acute. [Type *L. sericeus* Duft.]. Palearctic. ***Limnichus**

Prosternum sulcate; antennæ, sides of the front and antennal insertion as in *Limnichus*, but with the latter much more distant from the eyes, the lateral impression behind them smaller and more acutely impressed; scutellum broader, equilatero-triangular or very nearly. [Type *Limnichus ovatus* Lec.]. Nearctic to neotropical.

Limnichoderus

In the treatment of the Central American species Dr. Sharp has adopted too broad an interpretation of *Eulimnichus* and has mingled with some that are evidently true *Eulimnichus* a number of other elements; *sublævis*, for instance, and possibly *ephistemus* as well, is a member of the essentially tropical genus *Limnichalia*, described as new below, and the *Eulimnichus confertus* and *admirandus* of Sharp, almost certainly belong to *Limnichites*, a genus very distinct from *Eulimnichus* in the structure of the front and eyes, as well as in the remarkable cribrate sculpture of the body.

Lichminus is rather closely allied to *Pelochares* Muls., but differs rather strikingly in the structure of the lateral and inferior parts of the prothorax as detailed above. *Phalachrichus* Sharp and the closely allied *Limnichalia* are the least aberrant of the four purely tropical genera of the Limnichini now known. *Limnichus* Latr., and *Limnichoderus* constitute a well-marked group, though relatively limited in extent and forming but a small part of the tribe.

Limnichites Csy.

Limnichus (subgen. *Limnichites* Csy.), olim.

The prominent, coarsely faceted eyes and mode of antennal insertion sufficiently distinguish this genus, which is one of the more isolated types of the tribe, not only for those reasons but on account of the very deep and pronounced sculpture of the entire body generally prevailing. We have at present the following eight known species:

- Elytral punctures large, very deep and so densely crowded as to be regularly polygonal, with very fine separating walls, resembling a honey-comb. 2
- Elytral punctures almost as large and very deep but impressed, circular and isolated, separated by their own diameters to about one-half that extent according to the species. 3
- Elytral punctures decidedly smaller, less deep, more perforate than impressed and separated by from two to nearly three times their own diameters. 6
- 2—Oblong-suboval, the sides straight and parallel medially, black, not shining because of the dense sculpture though the fine interspaces are shining; pubescence very short, decumbent, coarse, cinereous, irregularly variegated with fulvous; punctures of the head and elytra rather large, polygonally crowded, those of the pronotum and abdomen almost equally dense but not quite so large; prothorax nearly two and one-half times as wide as the median length, the sides moderately converging from base to apex and feebly, subevenly arcuate, the apical angles produced and acute from above; surface obtusely impressed along the median line except apically, the scutellar lobe moderate; scutellum ogival, densely, coarsely punctate, slightly longer than wide; elytra scarcely a third longer than wide, rapidly very obtusely narrowed behind in apical third; third and fourth ventral sutures rather strongly gradually bent posteriorly toward the sides; hypomera only impressed near the inner angle. Length 1.6 mm.; width 0.85 mm. Texas (Austin and Columbus—original type from San Bernardino, Cal.). [*Limnichus nebulosus* Lec.,—Bull. U. S. Surv., 1879, V, p. 515]. **nebulosus** Lec.
- Oblong-oval, slightly larger and stouter, the sides straight for a shorter distance medially, black; sculpture throughout nearly as in *nebulosus*,

- the vestiture a little longer, coarser and more conspicuous, pale fulvous, irregularly variegated with cinereous; prothorax almost three times as wide as the median length, the sides as in the preceding but still less arcuate, the median line more finely and acutely impressed almost throughout the length, the apical angles similarly produced and acute; scutellum slightly narrower and more elongate, otherwise similar, ogival; elytra almost similar in form, except that the humeri are more broadly rounded and the sides, in rather more than apical third, more gradually and arcuately converge around the more broadly and evenly rounded obtuse apex; abdomen similar in form, convex, densely opaque because of the rather coarse, very deep and dense cribrate punctures, which are almost equal throughout; hypomera inwardly and deeply impressed almost throughout, coarsely, moderately closely cribrate, the sulcate prosternum with coarse perforate punctures, separated by a little less than twice their own diameters. Length 1.8 mm. width 1.0 mm. California (Calaveras Co.). **densissimus** n. sp.
- 3—Abdominal punctures very dense throughout, only very slightly smaller medially than laterally. 4
- Abdominal punctures materially less coarse and more widely separated medially than laterally, the entire surface of the abdomen more shining. 5
- 4—Body larger, oblong-oval, convex, black, rather shining, the pubescence short, coarse, decumbent, not dense, cinereous, slightly and feebly variegated with fulvous; head with large and very dense polygonal punctures; prothorax more than twice as wide as long, the sides rather strongly converging from base to apex and moderately arcuate; surface feebly, subacutely impressed along the middle part of the median line and with small punctures, separated by more than twice their own diameters, becoming much coarser and denser but not polygonal laterally, also with a short, transversely arcuate series of tumid punctures at the middle; scutellum slightly longer than wide, rather finely punctured like the middle of the pronotum; elytra about a fourth longer than wide, the sides parallel and straight, rounding at base, rapidly and strongly converging and but slightly arcuate in apical third to the narrowly obtuse apex; punctures coarse, deep, impressed, separated by their own diameters; abdomen dull, the punctures moderate in size, deep and very dense throughout, the third and fourth sutures strongly, evenly arcuate throughout the width and much stronger than the first two. Length 1.95–2.1 mm.; width 1.15–1.2 mm. Described here from Iowa and Louisiana; specimens originally cited from Pennsylvania. [*Limnichus punctatus* Lec.,—Proc. Acad. Phila., 1854, p. 116; *L. olivaceus* Lec., l. c.] **punctatus** Lec.
- Body rather large, somewhat as in *punctatus* but much narrower, duller, with denser sculpture and vestiture, the coarse close-set hairs on the elytra luteous, more definitely and sharply maculate with cinereous than in *punctatus*; prothorax relatively shorter, almost three times as wide as the minimum length, with the sides less strongly converging from base to apex and nearly straight; punctures

slightly larger, separated by not quite twice their widths medially, becoming notably coarser and densely crowded but not polygonal laterally, the transverse line of tumescent punctures rather less marked than in *punctatus*. the surface thence to the scutellum more concave and with a fine impressed and more impunctate median line; elytra longer, fully a third longer than wide, more gradually narrowed behind to the narrowly and feebly lobe-like tip, the punctures fully as coarse and closer, separated by evidently less than their own widths; under surface punctured nearly as in *punctatus*, the metasternum however rather less coarsely and closely. Length 1.95 mm.; width 1.05 mm. Virginia (Lee Co.).

virginicus n. sp.

Smaller species, narrower than in *punctatus*, more evenly oval, convex, black and less shining, the vestiture similar; head with rather coarse and deep, polygonally crowded punctures; prothorax three times as wide as its shortest length, the converging sides feebly arcuate, the advancing angles acute; surface with rather strong deep punctures, which are evidently smaller than those of the head and elytra and separated by one-half more than their own widths medially, becoming much denser but only a little larger laterally, rather finer behind two feebly marked lines proceeding somewhat obliquely and transversely from near the middle point of the finely impressed and subentire median line; scutellum slightly longer than wide, punctured nearly like the pronotum; elytra barely a fourth longer than wide, the sides feebly arcuate, more rounding basally and more gradually converging and arcuate in more than posterior third than they are in *punctatus*, the apex narrow and more acutely rounded; punctures rather coarse, very deep but impressed, separated by barely half of their own diameters; abdomen densely dull, in structure and sculpture nearly as in the preceding, the deeply sulcate prosternum with deep, nearly perforate punctures, separated by barely one-half more than their own widths. Length 1.6 mm.; width 0.85 mm. Texas (Austin). **austinianus** n. sp.

5—Oblong-oval, rather shining, black, feebly aenescant anteriorly, the pubescence short, coarse, subdecumbent, fulvous, mottled on the elytra with ill-defined cinereous spots; head deeply, densely punctate, the punctures obliquely subcoalescent on the vertical part of the front; prothorax much more than twice as wide as its median length, the sides moderately converging and broadly arcuate throughout, the punctures rather fine, separated by more than twice their own diameters, each attended by an extremely minute punctule alongside, the punctures becoming a trifle closer in a median area in basal half, which is limited anteriorly by just visible and transversely oblique subtumid lines, the punctures laterally moderately large and deeper but scarcely closer, being still separated by nearly twice their widths; scutellum moderate, punctured like the adjoining pronotum; elytra oblong, less than a fourth longer than wide, obtusely rounded behind, the apex with a narrow and feeble subtruncate lobe, the sides nearly straight thence in basal three-fifths, except at the slightly prominent humeri; punctures coarse, very

deep, impressed, separated by very nearly their own diameters; abdomen shining, the punctures laterally very large, moderately separated, becoming notably smaller and separated by twice their widths medially, the last segment closely cribrate throughout; sulcate prosternum with fine punctures, separated by more than three times their widths; hypomera deeply concave toward the inner angle. Length 1.65 mm.; width 0.8 mm. California (Gilroy Hot Springs, Sta. Clara Co.). [*L. (Linnichites) perforatus* Csy.,—Ann. N. Y. Acad., 1890, p. 155]. **perforatus** Csy.

Oblong-oval, in color, form and general sculpture nearly as in the preceding but a little broader, the vestiture somewhat longer and closer, less definitely mottled and more cinereous; head strongly, densely punctate, the punctures anteriorly not obliquely coalescent; prothorax with the punctures medially rather less fine than in *perforatus* but otherwise similar, separated by twice their widths, somewhat smaller but quite as sparse in a more flattened median basal area which is limited anteriorly by two rather distinct lines obliquely approaching the fine impressed median line and uniting therewith just beyond its middle point as in *perforatus*, the punctures laterally materially coarser and denser, separated by less than half their widths; scutellum as usual, slightly longer than wide, ogival and punctured like the adjoining part of the pronotum; elytra coarsely, very deeply impresso-punctate, the punctures separated by rather less than their own diameters; abdomen less shining than in the preceding, strongly and much more closely punctate throughout and more closely clothed with dark cinereous pubescence, the punctures medially not much finer than at the sides and separated by only about half their widths; on the sulcate prosternum stronger than in *perforatus* and separated by twice their own diameters. Length 1.6 mm.; width 0.85 mm. Texas (Columbus). **foraminosus** n. sp.

6—Larger than the preceding, more evenly oval, obtuse behind, the apex feebly and narrowly lobed, shining, black, the short decumbent hairs very coarse and conspicuous, pale fulvous, indefinitely mottled with cinereous on the elytra; head not very coarsely punctate, the punctures separated, becoming closely crowded only anteriorly; prothorax rather less transverse though evidently more than twice as wide as long, the rather more converging sides feebly and evenly arcuate, the surface with a transversely subarcuate series of tumescent punctures medially, only behind which is the median line impressed, the general punctures, fine, separated by two or three times their widths, becoming laterally only slightly larger and still separated by nearly twice their diameters; scutellum finely, sparsely punctate, subimpunctate about its ogival contour; elytra a fourth longer than wide, the sides broadly rounded basally, beginning to converge very slightly from near basal fourth, gradually more rounded posteriorly, the punctures small, not so deep as usual and separated by more than twice their diameters; abdomen closely, rather strongly cribrate, the punctures medially toward base becoming fine and separated by twice their widths, the punctures of the sulcate prosternum coarser and deeper but similarly separated

by about twice their widths. Length 1.9–2.0 mm.; width 1.2 mm. Michigan (Detroit). [*L. (Limnichites) olivaceus* Csy. nec Lec.,—Ann. N. Y. Acad., 1890, p. 154].....*huronicus* n. sp.

The remarkable median modification of the pronotum, either by a short transversely arcuate series of tumid punctures, as in the larger species *punctatus* and *huronicus*, or by shorter more feeble subtumid barely traceable and not specially punctured lines in most of the smaller species of this genus, is a character sometimes traceable in a greatly modified form in the genus *Eulimnichus*, and was first discovered by Dr. Sharp in examining some Central American species, where it becomes strikingly developed; it is therefore a somewhat general character, though as noted thus far not affecting any other groups than *Limnichites*, *Eulimnichus*, *Phalacrachus* and *Limnichalia*; it cannot be correlated with any other special modification, either of the pronotum or prosternum, and is probably a vestigial character of some sort. Its presence in only the four genera mentioned does not indicate generic identity of those four groups, for the differences in the front, eyes and antennal insertion between *Limnichites* and *Eulimnichus* are far more significant than those distinguishing either of these genera from some others, such as *Lichminus*, not possessing this special pronotal character.

In my former revision of this group I reinstated *olivaceus* Lec., on what now prove to be some erroneous or unwarrantable assumptions, for, on reading the original description of *olivaceus*, I observe the statement that "the punctures are larger" than in *punctatus*—though this proves to be largely fanciful,—while in *olivaceus* Csy., nec Lec., named *huronicus* above, the punctures are very much smaller than in *punctatus*. Again under the original description of *obscurus* (l. c., 117) appears the statement "less densely and more finely punctured than those above described [*olivaceus* and *punctatus*], the punctures being more distant from each other than their own diameters." It is to be inferred from this that the punctures in *olivaceus* and *punctatus* are separated by not more than their own diameters, a condition which is known to be exactly that existing in *punctatus*, while in *huronicus* the punctures, which are much smaller and feebler, are separated by between two and three times their diameters. Furthermore there can be no jus-

tification in assuming that the specimen bearing the type label of *olivaceus* in the LeConte collection is not truly the type of that species, which, as I stated in my former revision, is indistinguishable from the type of *punctatus*, especially when this fact is corroborated by LeConte himself in his latest table of *Limnichus*,—although this in itself is not conclusive evidence, as the author was mistaken in uniting his *obscurus* with *ater*. There can be no doubt therefore that the species described above under the name *huronicus* is valid and distinct from *punctatus*; *virginicus* is closely allied to *punctatus* but seems to be distinct.

Though almost certainly identical and following the distribution of many species, such as *Limnichoderus naviculatus* and *Physemus minutus*, *nebulosus*, as described above from central Texas specimens, may possibly be different specifically from the San Bernardino type; but the description of LeConte is ambiguous and valueless in totality, being simply: Body beneath densely and coarsely punctured, smaller and more elongate than *punctatus*; pubescence above brownish, mottled with silvery-white. 1.5 mm. San Bernardino, Cal. In case of conflict it might be contended that these few words could not be held to be proper publication, if in doing this we did not have to rule out a large proportion of the species of Fabricius and some other early authors as well. *Eulimnichus confertus* Shp., is evidently very closely allied to *austrianus* and *E. admirandus* Shp., from Teapa, may be identical with *nebulosus* Lec.

Eulimnichus Csy.

Limnichus (subgen. *Eulimnichus* Csy.), olim.

The species of this genus are rather more numerous perhaps than those of *Limnichites*, and individuals of the various species are apparently much more abundant and less local as a rule. The transverse line of the pronotum, when visible, never has the nature of a swelling of the surface or a series of detached punctures, but is formed by a simple intensification of the minute reticulation of the surface and is rendered evident only by its consequently slightly greater opacity; the line is always very fine and feebly marked, frequently wholly wanting and would never be noticed if not particularly searched for in connection with the transverse series of punctures, frequently notably evident in the preceding genus

and forming so conspicuous a feature in the allied tropical genera. The sculpture is generally moderate, the head always with compressed longitudinally anastomosing furrows and fine plication, instead of the evenly cribrate sculpture of *Limnichites*, and the scutellum is always much more elongate and more acutely ovoid. The punctures are always feebler or obsolescent toward the sides of the upper surface, especially behind, which is not the case in *Limnichites*, but the prosternum is constantly and similarly sulcate along the middle. Our species, nine in number, may be separated as follows:

- Surface between the punctures, at least toward the sides of the pronotum, more or less strongly micro-reticulate.....2
 Surface toward the sides of the pronotum smooth and polished, devoid of evident micro-reticulation.....7
 2—Elytral punctures stronger, distinct, separated by slightly more to evidently less than twice their own diameters.....3
 Elytral punctures minute, feeble and very remotely scattered, sometimes almost completely obsolete.5
 3—Prosternal episterna finely attenuate anteriorly, attaining the minute lateral incisure of the apex or very nearly. Body oblong, convex, very obtuse before and behind, black, with feeble grayish shining lustre, the vestiture short, close, coarse, decumbent, pale, dull fulvous, feebly mottled with cinereous; head with the usual anastomosing longitudinal furrows; prothorax three times as wide as its minimum length, strongly narrowed from base to apex, with straight sides; surface with a very fine and feeble transverse line of greater opacity and with a fine striiform impunctate median line evanescent toward tip, the punctures fine, widely separated, becoming still finer, much feebler and even sparser in the densely reticulate lateral areas; elytra a fourth longer than wide, parallel, the sides straight, rounding at the slightly tumid humeri, gradually broadly and evenly rounding behind in about apical third, the punctures not very deep or coarse, separated by not quite twice their diameters; abdomen rather dull, the micro-reticulation everywhere strong, the surface somewhat longitudinally furrowed, with fine, well separated punctures which become coarse and coalescent at the sides, forming a coarse marginal furrow, the last segment (♂) with a median area, pointed behind, which is depressed, extremely densely, finely chagrined and densely clothed with long yellowish-cinereous hairs, the pubescent area smaller, feebler and less definite (♀). Length 2.15-2.45 mm.; width 1.15-1.3 mm. California (about Monterey Bay). [*Limnichus analis* Lec.—Bull. U. S. Geol. Surv., V, 1879, p. 515]. **analis** Lec.
 A—Similar to the preceding but smaller and narrower, the vestiture rather closer and more conspicuous, the pronotal punctures still finer and sparser; abdomen more shining, finely, sparsely punctate,

the triangular depressed opaque and densely pubescent spot of the last segment (σ^7) relatively broader, at base rather more than a third as wide as the segment, whereas in *analisis* it is much less than a third as wide as the segment. Length 1.8–2.2 mm.; width 0.95–1.2 mm. Arizona (Riverside),—Wickham.

rugiceps n. subsp.

B—Similar to *analisis* but more parallel and relatively more elongate, the elytral punctures rather smaller, fully as well separated and notably feebler, the coarse decumbent hairs more readily denuded or less persistent; impressed median line of the pronotum much broader and deeper but only extending from the base to slightly beyond the centre; elytra much longer, a third longer than wide; abdomen slightly alutaceous, finely, sparsely punctate, the last segment (σ^7) as in *analisis*. Length 2.2 mm.; width 1.15 mm.

Colorado (Denver).....**coloradensis** n. subsp.

Prosternal episterna acute and attenuate anteriorly but more rapidly so and not quite attaining the apex or the lateral fissure at apex; sculpture not so strong or dense.....4

4—Form somewhat as in *analisis* but much smaller, more shining and more finely and sparsely punctate, oblong-oval, convex, shining, black, not densely clothed with moderately coarse decumbent and slightly variegated pubescence; prothorax strongly transverse, the converging sides straight, the surface feebly micro-reticulate, strongly at the sides, the punctures small, widely separated, even feebler and sparser laterally, without fine transverse line of opacity, the median line finely impressed in about basal half only; scutellum very minutely, sparsely punctate; elytra barely more than a fourth longer than wide, obtuse behind, the sides parallel and just visibly arcuate thence to the slightly rounded humeri, the punctures small, feeble, separated by three to four times their widths; abdomen strongly shining, finely but strongly, sparsely punctate, the punctures coarse and close narrowly along the sides and apex, the last segment (σ^7) with a large central pubescent area, which is strongly, densely punctate but rather indefinitely limited and scarcely at all impressed. Length 1.6–1.8 mm.; width 0.8–1.0 mm. Abundant in the entire maritime region of California. [*Limnichus californicus* Lec.,—Bull. U. S. Surv., V, 1879, p. 515].....**californicus** Lec.

Form more elongate and more evenly, in fact very evenly, oval, much more gradually pointed behind than any of the preceding, black, larger and less shining than *californicus*, the vestiture nearly similar, not dense, slightly variegated, pale fulvous and cinereous; prothorax very transverse as usual, the strongly converging sides feebly, evenly arcuate, exactly continuing the outline of the elytra, finely but strongly, loosely punctate, rather less sparsely but more feebly laterally, with a feeble transverse line of opacity, the median line finely impressed and striiform, obsolete apically; elytra a third longer than wide, the sides very evenly rounded from base to apex, gradually very little more so behind, the apex much more acutely rounded than usual, widest between basal third and fourth, the punctures small but rather strong, separated by slightly less than

three times their widths; abdomen shining, faintly micro-reticulate, finely, sparsely punctate, not more coarsely so near the sides, the last segment (σ^7) with a small apical spot which is slightly impressed, densely punctate and clothed with coarse but not notably long whitish hairs, less erect and shorter than in the preceding forms. Length 2.0 mm.; width 1.2 mm. New York. [*Linnichus obscurus* Lec.,—Proc. Acad. Phila., 1854, p. 116]. **obscurus** Lec.

- 5—Surface lustre alutaceous, more shining and subæneous anteriorly. Form nearly as in the preceding, very evenly oval, convex, gradually rather pointed behind, the sides continuously arcuate throughout, black, the very short sparse and decumbent vestiture easily shed; head with the usual dense, anastomosing, longitudinally pliciform sculpture, with small included punctures; prothorax rather less than three times as wide as the minimum length, finely, sparsely punctured, the fine micro-reticulation feeble, strong laterally, where the punctures are feebler as usual, the median line impressed and striiform in basal half; elytra alutaceous, the micro-reticulation larger and more polygonal than on the pronotum though feeble, the punctures fine, sparse and very feeble, annuliform, shallower than those of the pronotum; abdomen more shining, very minutely, sparsely punctulate, not more coarsely laterally, the last segment more strongly laterally and apically, the pubescent spot (σ^7) subapical, feebly defined and closely punctate but with short inconspicuous hairs. Length 1.8–2.0 mm.; width 1.15–1.2 mm. Colorado (Buena Vista,—8000 feet elevation—Wickham; Veta Pass,—LeConte). [*Linnichus montanus* Lec.,—Bull. U. S. Geol. Surv., 1879, p. 515].
montanus Lec.

Surface lustre strongly shining throughout, the sparse decumbent pale vestiture more persistent, coarse as usual but very short. 6

- 6—Form rather broadly oval, rounded at the sides, gradually rather acute behind, black, polished, the micro-reticulation of the upper surface everywhere fine and subobsolete, evident though not strong toward the sides of the pronotum; plicate sculpture of the head distinct; prothorax barely two and one-half times as wide as long, the strongly converging sides straight, the apical angles much produced and acute as usual; median line finely striiform from the middle nearly to the base, not concave, the transverse line of opacity wholly wanting, the punctures minute and sparse; scutellum as usual, elongate-ogival; elytra about a fourth longer than wide, almost evenly rounded at the sides, gradually acuminate, minutely, sparsely and very inconspicuously punctulate; abdomen shining, much less finely though loosely, more deeply punctate, the last segment more coarsely and (σ^7) with a small, indefinite, more closely punctured patch near the apex, clothed rather inconspicuously with slightly longer hairs, the tip with a shallow transverse emargination as usual. Length 1.5–1.8 mm.; width 0.75–1.0 mm. Mississippi (Vicksburg) to New Mexico (Albuquerque). [*Linnichus (Eulinnichus) perpolitus* Csy.,—Ann. N. Y. Acad., 1890, p. 151]. **perpolitus** Csy.

Form more narrowly oval and smaller in size, similar in general outline, sculpture and vestiture, black, similarly convex, rounded at the

sides and gradually arcuately acute behind but with the lustre not quite so polished, the micro-reticulation somewhat more evident throughout, notably coarse and polygonal on the elytra though very feebly defined; abdomen shining, finely, sparsely punctate, the last segment coarsely, except at base, but not densely, having (σ^7) a large posteriorly pointing equilatero-triangular central space of dense punctures, somewhat as in *analis*, but not impressed, more indefinitely limited and clothed with shorter, much less conspicuous pale hairs. Length 1.4-1.6 mm.; width 0.65-0.73 mm. Southern California *evanescens* n. sp.

- 7—Lustre rather dull, the outline notably short and broad though rather acutely ogival at apex. Black, convex, the vestiture coarse, close, conspicuous and persistent, obscure fulvous, distinctly though indefinitely mottled with cinereous; head with pliciform sculpture which is replaced by isolated coarse punctures on the occiput: prothorax short as usual, the strongly converging sides straight, the surface with a minutely striiform line basally, the punctures fine, well separated, not feebler toward the sides as usual but evidently deeper, a little larger and somewhat less widely separated, with the interspaces not at all reticulate but smooth and polished; elytra evidently less than a fourth longer than wide, the sides parallel, feebly arcuate and rounding at the humeri, gradually rounding and converging behind the middle, the apex somewhat acutely ogival, the punctures a little larger than those of the pronotum, rounded but not very deep, separated by rather less than twice their diameters; abdomen finely, rather sparsely punctate, the last segment deeply and densely almost throughout, without a distinct spot of condensed punctures and pubescence. Length 1.65-1.8 mm.; width 0.8-1.05 mm. North Carolina, Florida and Louisiana. [*Limnichus ater* Lec.,—Proc. Acad. Phila, 1854, p. 117]. *ater* Lec.
- Lustre strongly shining, more narrowly oval and smaller in size, the vestiture less close-set and much less conspicuous, more easily denuded. 8

- 8—Outline oval, rounded at the sides, gradually acutely ogival behind from rather before the middle of the elytra, polished, deep black, without any sort of metallic lustre, the sparse vestiture coarse and rather long, mingled fulvous and cinereous; head with pliciform sculpture, becoming not very large, widely isolated punctures posteriorly; prothorax short, with the rapidly converging sides straight, having a finely striiform median line from the middle nearly to the base, the punctures rather fine but deep, well separated, becoming even a little stronger but scarcely at all closer laterally, where the interspaces are highly polished and without trace of micro-reticulation; elytra in outline nearly as in *ater* but rather more elongate, fully a fourth longer than wide, the punctures a little larger than those of the pronotum but not so deep, separated by more than twice their own widths, evanescent as usual laterally and apically; abdomen convex, shining, finely, sparsely punctate, the last segment more coarsely punctate only toward the sides and about the apex, without a definite

patch of denser punctures and pubescence; prosternum rather strongly punctate, the punctures separated by nearly twice their diameters. Length 1.5 mm.; width 0.75 mm. Georgia. [*Limnichus nitidulus* Lec.,—Proc. Acad. Phila., 1854, p. 117].. **nitidulus** Lec. Outline, color and lustre nearly as in *nitidulus* but slightly narrower, the sides rounded, gradually ogival posteriorly but with the tip of the elytra rather more obtuse and sublobate; pubescence rather less sparse, finer, shorter, rather persistent and almost uniformly dusky-cinereous in color, less conspicuous; head with pliciform sculpture, replaced posteriorly by rather coarse, very close-set punctures, which are somewhat laterally compressed; prothorax not quite so short as in the preceding and with the converging sides not straight but feebly arcuate, the median line and punctures similar, the latter becoming rather more notably stronger though not closer laterally, where the interspaces have a very feeble and subobsolete micro-reticulation, observable only with difficulty; elytra nearly similar though not quite so elongate, the apex narrowly obtuse and lobiform, the punctures more than twice as large as those of the pronotum but relatively shallow and very broadly impressed, separated by rather more than twice their diameters; abdomen with rather strong though well separated punctures, the last segment (σ^7) strongly, very closely punctate throughout, the punctures gradually becoming fine and very dense in a small, subapical, unimpressed opaque spot on which the hairs become slightly longer and denser but scarcely paler and inconspicuous; prosternum nearly as in the preceding. Length 1.5 mm.; width 0.7 mm. Rhode Island (Boston Neck).

sculpticeps n. sp.

The species named *analisis* by LeConte, is definitely restricted in the above table to those individuals, the largest of the genus, occurring somewhat abundantly in the coast regions south of San Francisco; several allied forms occur, also abundantly as a rule, in the desert regions of Arizona and Colorado, two of which are defined above under the subspecific names *rugiceps* and *coloradensis*. The Colorado form is quite distinct, having sparser and more easily denuded vestiture, a more oblong parallel outline and much longer elytra. Both of these forms are probably specific in value, rather than subspecific, but are left with the latter status for the present; they were all thrown together under the name *analisis* by LeConte and in my previous revision, but it is well to have the typical form fixed as a foundation for future work. The very few words forming the original description of *californicus* are largely erroneous or misleading, it being stated that the last ventral segment has no dense central pubescence and that the elytra are strongly punctured; relatively to *perpolitus* the latter statement is passably correct, but

to such forms as the genus *Linnichites*, which were included in the same table, it is altogether wrong.

Lichminus Csy.

Linnichus (subgen. *Lichminus* Csy.), olim.

This genus is very well characterized by the broad unimpressed prosternum, broad flat hypomera, wholly devoid of the usual shining inner margin so developed in *Pelochares* and distinct even in *Linnichoderus*, by the unusually large equilatero-triangular scutellum and rather long antennæ, in which feature as well as the non-sulcate prosternum it is allied to *Pelochares*, being the only close approach to that European genus occurring in North America; but it differs from *Pelochares* in the formation of the side margins of the prothorax, the fine reflexed edge continuing here to the apex, while in that genus it terminates anteriorly in a fine prominent angle at some distance behind the thoracic apex. The prosternal episterna are shorter, with the anterior angle simple and moderately acute, not somewhat produced as it is in *Pelochares*. We know as yet but a single species definable as follows:

Evenly elongate-oval, gradually sharply acuminate behind, strongly convex, black, rather feebly shining, the vestiture decumbent, moderately short, not dense, coarse and almost uniformly fulvovincereous; head evenly convex, strongly micro-reticulate, the very fine feeble punctures thereby rendered indistinct; prothorax short, with strongly converging and nearly straight sides, the apical angles not or scarcely produced from above, the usual basal lobe rather short, wider than usual, the median line not at all impressed, the punctures minute and sparse, not stronger or denser laterally; elytra more than a fourth longer than wide, the sides evenly rounded, gradually converging and less arcuate to the acutely ogival apex, widest well before the middle, the micro-reticulation relatively very coarse but feeble, the punctures sparse, extremely fine, scarcely more than scars marking the attachment of the hairs; abdomen shining, feebly micro-reticulate, rather long, obtusely acuminate and only slightly convex, very finely, evenly, not densely punctate, the last segment more coarsely and closely throughout though very shallowly and with somewhat longer fine hairs. Length 1.65-1.8 mm.; width 0.85-0.95 mm. California (Hoopa Valley, Humboldt Co.). [*Linnichus* (*Lichminus*) *tenuicornis* Csy.,—Ann. N. Y. Acad., 1890, p. 155]. **tenuicornis** Csy.

The three specimens in my collection are very uniform and exhibit no variability.

Limnichalia n. gen.

The general characters of this genus conform throughout to those of others here assigned to the Limnichini, the special modifications being the sulcate prosternum, the fine, posteriorly arcuate epistomal suture, the continuous oblique cariniform margins from the eyes to the epistomal apex, concealing the attachment of the antennæ, the more continuous elytral epipleura, these being sinuated for the tips of the hind femora in repose, the long pale antennæ, with peculiarly modified second joint and very long loose and gradually broadened compressed 5-jointed club and the rather long slender tarsi. The type may be described as follows:

Oval, moderately convex, acutely ogival at apex, polished, pale castaneous in color, the legs pale brown, the mouth-parts and antennæ pale flavate, the vestiture sparse, consisting of moderately long fine erect recurved hairs, dusky in color and not variegated; epistoma strongly reticulate, chagrined and indistinctly punctate, the entire remainder of the upper surface devoid of fine ground sculpture of any kind; head with rather large shallow and separated punctures anteriorly, which fade completely away posteriorly, the latter surface and entire pronotum with sparse, excessively minute punctules, not larger than the base of the hairs and not larger or closer laterally on the latter; prothorax about three times as wide as long, the strongly converging sides evenly and distinctly arcuate, the basal lobe almost completely obsolete, the surface evenly convex, not impressed medially, having, slightly behind the middle, a short transverse and feebly arcuate series of fine close-set asperulate punctures; scutellum large, with arcuate sides, acutely ogival, barely longer than wide; elytra fully a fourth longer than wide, widest near basal third, the sides evenly rounded, gradually converging and less arcuate posteriorly to the rather acute apex, very finely, feebly, rather sparsely punctulate; abdomen narrowly parabolic, convex, moderately shining, finely, feebly, asperulately but rather closely punctate, the hairs longer and more numerous posteriorly, pale, yellowish, the sutures fine, the last two but slightly more distinct than the two anterior. Length 1.6 mm.; width 0.85-0.9 mm. Isthmus of Panama (Colon). *colonica n. sp.

As before stated *Eulimnichus sublævis*, of Sharp, described from Guatemala, also belongs to this genus but differs in its darker color, stronger sculpture and less distinct vestiture; there are doubtless many other Central American species, among which the minute *Eulimnichus ephistemus* Sharp, may be included.

There are two other Central American genera assigned by Dr. Sharp to the Limnichini, besides *Phalacrachus* and *Limnichalia* here

considered. These genera, named *Cyphonichus* and *Euthryptus*, both have fragile antennæ of aberrant structure but do not seem to have the transverse pronotal series of the first two genera, and also lose most of the peculiar facies of the *Limnichini*. I am compelled to pass over them at present, no examples being at hand.

Limnichoderus Csy.

Limnichus (subgen. *Limnichoderus* Csy.), olim.

The diminutive species of this genus, together with *Limnichus*, which is the principal European genus of the tribe and including numerous species of slightly greater average size, form a very distinctly defined group of the *Limnichini*, distinguished by the structure of the sides and base of the head, coarse epistomal suture and dual vestiture of very short dense appressed hairs, with longer sparse erect hairs interspersed, as before noted. The scutellum is of rather small size, generally slightly longer than wide and of triangular form. The other characters, including the crural excavations, are those of the tribe, without any striking modifications so far as noticed. Our species, some eight in number, may be defined as follows:

- Abdomen without trace of scattered punctures, finely, uniformly and densely chagrined and dull in lustre. Form oval, convex, somewhat rapidly and not very acutely acuminate behind, the minute punctures bearing the very short hairs dense throughout, castaneous in color, paler beneath, sometimes blackish above, the vestiture pale brown, variegated slightly on the elytra with two or three silvery spots, apparently caused to some degree by the different angle of reflected light due to the changing direction of the hairs; head convex, the lateral depression behind the antennæ deep and with longer whitish hair; prothorax very short, the converging sides nearly straight, unimpressed, the sculpture not stronger laterally, the basal lobe distinct; elytra about a fourth longer than wide, widest near basal third, the sides rounded, converging gradually behind, the apex narrowly, subacutely and feebly lobed, the surface convex at base to the level of the pronotum, having, in addition to the minute ground sculpture, a few scattered perforate punctures of moderate size. Length 1.4–1.5 mm.; width 0.7–0.78 mm. Central Texas to southern California. [*Limnichus* (*Limnichoderus*) *naviculatus* Csy.,—Ann. N. Y. Acad., 1890, p. 156]...**naviculatus** Csy.
- Abdomen finely, densely and evenly sculptured and more or less dull, but having in addition a few scattered perforate punctures of moderate size.....2
- Abdomen with minute dense sculpture and dull lustre as in the preceding,

- but in addition with many rather closely placed coarsish punctures, which are larger than in the preceding group.....7
- 2—Elytra gradually narrowed and with less arcuate sides from about basal third to the apex, which is notably acute.....3
- Elytra more rapidly narrowed and more arcuate at the sides posteriorly only from about the middle, more obtusely ogival at apex.....4
- 3—Punctures of the abdomen only visible toward the middle basally, few in number and very feebly defined, the fine ground sculpture very dense. Form more briefly oval, convex, piceous-black, scarcely paler beneath, the dense vestiture almost uniformly dark ashy, scarcely at all variegated; prothorax two and one-half times as wide as long, the moderately converging sides straight; punctures minute, close-set and rather deep, the interspaces polished, the median line feebly striiform only centrally; elytra shorter than usual, barely visibly longer than wide, the strongly and evenly rounded sides gradually less arcuate posteriorly to the acute apex, the surface not notably convex at base to the level of the pronotum, irregularly and finely, rather sparsely and perforately punctate, the minuter hairs not borne from evident punctures. Length 1.2 mm.; width 0.65 mm. Texas (Columbus).....**pulvereus** n. sp.
- Punctures of the abdomen small but more numerous and more visible, the ground sculpture less deep and dense, with the surface a little more shining medially. Form more elongate-oval, still more gradually narrowed behind to the very acute apex, blackish, the under surface slightly, the legs much, paler, rather more shining than usual, the erect hairs somewhat more numerous and the decumbent apparently a little longer; prothorax relatively less transverse than in *pulvereus*, the sides more strongly converging from base to apex, nearly straight, the minute punctulation rather finer and feebler and not quite so close-set; elytra nearly a fourth longer than wide, the rounded sides very gradually converging posteriorly to the still more notably acute apex, the scattered punctures rather numerous but widely spaced and distinctly more minute than in the preceding, the interspaces smooth and shining, the extremely minute scars left by the shorter hairs almost invisible. Length 1.3–1.35 mm.; width 0.65–0.73 mm. Georgia to Louisiana. [*Limnichus ovatus* Lec.,—Proc. Acad. Phila., 1854, p. 117].....**ovatus** Lec.
- 4—Pubescence very short, rather finer and not so dense, allowing the integuments to shine distinctly through the vestiture.....5
- Pubescence less abbreviated and very dense, so that when intact the upper surface is densely dull, the integuments well covered.....6
- 5—Form not very broadly oval, convex, pale castaneous, still paler beneath, the short vestiture extremely short, not dense, yellowish, the longer and more erect hairs not numerous, the few rather irregular longitudinal series of stiffer and more erect hairs difficult to see; prothorax two and one-half times as wide as long, the converging sides straight, the surface not evidently impressed medially, the punctures very minute, feeble and well separated; scutellum evidently longer than wide, acutely triangular; elytra scarcely a fourth longer than wide, not evenly oval, the sides parallel and moderately

arcuate, rounding at the humeri and more gradually rounding and converging behind the middle to the evenly ogival apex, the surface not strongly convex at base, the punctures fine, perforate, rather sparsely scattered, the points of attachment of the short hairs not distinct, the surface polished, the coarse punctures scattered along the finely reflexed lateral margins only moderately large, deep, the surface adjoining the margin barely at all impressed; abdomen not quite so strongly or densely dull as usual, the few scattered punctures very fine though evident. Length 1.2 mm.; width 0.63 mm. Florida (Capron). [*Limnichus (Limnichoderus) seriatus* Csy.,—Ann. N. Y. Acad., 1890, p. 158].....**seriatus** Csy.

Form more broadly oval, not quite so shining, blackish, paler and dusky-rufous beneath, the short hairs rather longer and more evident; prothorax similar in outline but with the very minute punctulation rather more close-set; scutellum a little broader, triangular; elytra about a fifth longer than wide, similar in general form to the preceding, the punctures more numerous, much coarser and deeper than in *seriatus*, becoming still more notably coarse, deep and numerous on the convex flanks, coarse along the fine reflexed lateral margins and sublinear in arrangement throughout, the surface evidently impressed along the lateral margin; abdomen more densely dull than in *seriatus*, the fine and widely scattered punctures less visible. Length 1.2 mm.; width 0.66 mm. Florida (locality unrecorded).

floridanus n. sp.

6—Outline almost regularly oval, stout, only moderately convex, blackish, dusky-rufous beneath, dull; head rather small; prothorax short and strongly transverse, the very strongly converging sides nearly straight, not impressed medially, the very minute punctures bearing the short dense appressed pubescence close-set; elytra barely a fifth longer than wide, widest near the base, the sides evenly rounded, not more strongly at the humeri, gradually converging and arcuate posteriorly to the ogival apex, the very dense matted pubescence luteous-brown, somewhat variegated, the larger scattered punctures much coarser than in any of the preceding, also coarse and sublineate on the flanks, the subvertical part of which is shallower than usual; abdomen with fine dense sculpture, the scattered punctures rather numerous, moderately large and distinct. Length 1.5 mm.; width 0.8 mm. Central Texas (Belfrage). [*Limnichus lutrochinus* Lec.,—Bull. U. S. Geol. Surv., V, 1879, p. 515].....**lutrochinus** Lec.

Outline shorter and broader, smaller in size, more rapidly ogival behind, more convex, the short pale yellowish-fulvous pubescence shorter and less abundant but very conspicuous, the longer suberect hairs numerous; surface more shining beneath; color blackish-castaneous, dusky-rufescent beneath; prothorax as in *lutrochinus* but not quite so broad, the fine close-set punctures distinctly larger and less numerous and the short hairs shorter and less dense; elytra still shorter, but little longer than wide, the sides more parallel, broadly arcuate, slightly more rounding basally than in *lutrochinus* and rather more rapidly rounding and converging from near basal third to the ogival apex, the surface more shining and less pubescent in a basal

region toward the scutellum, the punctures still coarser than in the preceding, rather numerous, not at all coarser near the lateral margins and very distinct in the less pubescent basal region, the short pale hairs forming two very indefinite fasciæ; abdomen minutely, very densely sculptured and dull, the few scattered punctures unusually small and difficult to observe. Length 1.3 mm.; width 0.75 mm. Texas (locality not recorded).....**lanosus** n. sp.

- 7—Oval, convex, shining, black above, piceo-rufous beneath, gradually though rather obtusely ogival at tip, the integuments polished, without any form of ground sculpture; prothorax rather narrower than usual, but little more than twice as wide as long, the converging sides straight, the surface very even, not impressed medially and with rather well separated punctures throughout but so minute as to be invisible except under great enlargement; elytra a fourth longer than wide, widest rather before the middle, the sides rounded, gradually slightly less so and converging posteriorly and a little more rounded at the humeri, the punctures small and widely spaced, gradually slightly larger sublaterally, becoming virtually obsolete near the suture, on the lower part of the flanks basally and on the humeral swelling, the impression along the finely reflexed lateral margin with a widely spaced series of very moderate punctures; short hairs only moderately dense, fulvo-cinereous, the longer hairs rather numerous but inconspicuous; abdomen more shining than usual, the minute sculpture finer and less dense, the punctures however much coarser and more numerous than in any other, perforate, separated by from once to twice their diameters throughout, except a moderately narrow area along the middle, where they become fine and sparse. Length 1.3 mm.; width 0.78 mm. Florida (Capron). [*Limnichus* (*Limnichoderus*) *punctiventris* Csy.,—Ann. N. Y. Acad., 1890, p. 159].**punctiventris** Csy.

There is, in all the species of this genus, a smooth shining and impunctate apical margin of the pronotum; it is delimited from the rest of the surface by an entire and very even transverse series of minute close-set asperulate punctures. This apical margin so delimited is not observable in any species of *Limnichus* that I have examined, and it forms another important structural difference between the two genera. Being apical and not submedial on the disk of the pronotum, it is not in any way associable with the transverse series of asperate punctures noticed by Dr. Sharp in some tropical types and referred to above under *Limnichalia*, and in *Limnichoderus* no medial transverse line of any kind is ever traceable. *Punctiventris* and *naviculatus* are very distinctly characterized species, at opposite extremes in regard to peculiarities of abdominal sculpture though mutually very consistent otherwise.

Tribe BOTHRIOPHORINI.

The different facies due to the very minute size of the body, together with the radically different structure of the antennæ and method of protecting them in repose, would seem to suggest a distinct tribe for species of the *Bothriophorus* type, though in most of their structural characters they are distinctly foretoked in *Limnichus*, the more general features of the head, under surface, legs, crural cavities and vestiture being almost identical; this however means subfamily relationship rather than tribal. There are two genera as follows:

- Antennæ with a gradually enlarged and rather compact, 3-jointed club, preceded by but one small joint. [Type *B. atomus* Muls.]. Palæ-arctic ***Bothriophorus**
- Antennæ with a 2-jointed club, preceded by three equal small joints, the last joint notably large, shining, oval and bristling with long sparse hairs, which are nearly wanting basally; first joint rather shorter than the second and somewhat concave on its upper surface to receive the rather prominently rounded sides of the front just behind the epistoma and over the point of antennal insertion. [Type *P. minutus* Lec.]. Nearctic (Sonoran).....**Physemus**

The joints in the basal and distally tapering part of the antennæ, in both these genera, are very closely united and separated by close transverse lines of contact; they are II-jointed in both. A diagram of the antenna of *Physemus minutus* (*Ditaphrus scymnoides* Csy.) may be found in the Bulletin of the California Academy, II, 1886, plate VII, fig. 18. *Bothriophorus* Muls., is exclusively European; its type, *atomus* Muls., resembles *Physemus minutus* very closely to external view.

Physemus Lec.*Ditaphrus* Csy.

The generic characters of *Physemus* reproduce those of *Limnichus*, with the exception noted above. The head is very similar in being convex at the sides before the eyes, with a short transverse epistoma, separated from the front by a deep suture and with a deep impression on the sloping sides of the front behind the antennæ, the eyes being subvertical and unusually coarsely faceted. As leading toward *Physemus* and *Bothriophorus*, it may be noted that the antennæ in *Limnichus* and *Limnichoderus* are partially sheltered in depressions, feebly defined at the base of the head itself but not involving the pronotum. The antennæ however are short, very stout basally

and of a distinctly different type of structure from any observable in the preceding tribe. The type of the genus may be described as follows:

Oval, rather sharply ogival behind, convex, moderately shining, black above, dark rufous beneath, clothed not very densely with very short decumbent fuscous hairs, with a feebly defined silvery spot on each elytron and with very few if any erect hairs intermingled; head convex, finely, rather closely punctate, the eyes with a cariniform margin immediately above them, at the anterior end of which is a deep pubescent rounded pit immediately behind the antennæ, and, at the posterior end, another deep rounded pit which is at the mouth of the oblique, polished, abruptly formed and deep pronotal fossa, the cylindrical bottom of the latter sloping upward posteriorly to the level of the pronotum; prothorax short and transverse, with strongly converging sides running into the fossæ from a dorsal viewpoint, minutely and closely punctate throughout and with a fine polished anterior margin, which seems to be slightly elevated and delimited by a finely and irregularly ragged line, the basal lobe well developed, the median line wholly unimpressed; scutellum rather small, a little longer than wide, triangular; elytra barely visibly longer than wide, rather widest near basal third, the sides rounded, gradually converging posteriorly to the acutely ogival apex, at base continuing the outline of the prothorax, very finely, equally and closely punctate, the punctures separated by two or three times their diameters, becoming asperulate laterally and apically, the interspaces without minute sculpture; abdomen minutely, densely sculptured and opaque, not punctate, the coxæ all very widely separated, the metasternum large, with distinct perforate punctures laterally, becoming very fine medially, the prosternum evenly convex, not sulcate, very broad, the wide apex broadly arcuate and received closely within a very broad shallow sinus of the short mesosternum. Length 0.68–0.88 mm.; width 0.45–0.58 mm. Central and southern Texas to southern California. [*P. minutus* Lec.—Proc. Acad. Phila., 1854, p. 117; *scymnoides* Csy.,—Bull. Cal. Acad., 1886, p. 252 (*Ditaphrus*)]. **minutus** Lec.

The posterior margin of the prosternum is not truncate as stated in my original definition of *Ditaphrus*, but broadly rounded as described above. This species is abundant; one specimen from Albuquerque, New Mexico, is a little larger than the others and there is some slight variation in the size of the pronotal and elytral punctures; there is however apparently but a single species, extending from Brownsville and Austin, Texas, to Fort Yuma, California.

The anterior smooth margin of the pronotum, defined by an irregularly jagged line, is homologous with the much broader margin

of *Limnichoderus*; in the European *Bothriophorus* this margin is reduced to a very fine and feeble even marginal bead. In the latter genus there is an oblique impression at the sides of the metasternum, to receive the tarsi when retracted; there is no trace of this in *Physemus*. *Physemus* is erroneously given as a synonym of *Bothriophorus* in the recent European catalogue.

Subfamily AMPHICYRTINÆ.

The longer and perfectly free or unretractile legs in *Amphicyrta* and allied genera impart a difference of facies which, taken in connection with the more narrowly separated coxæ and some remarkable modifications of the epipleura, might almost warrant the proposal of a distinct family; but there may be cause to deprecate too much reduction in the weight of family characters, though in such sections of the Coleoptera as that comprising the Byrrhids and Dascillids* it is very difficult to say whether there are really numerous valid families or only one very composite family. However, that *Amphicyrta* represents a very different type from any of the preceding is quite evident. The very broad hypomera, separated from the prosternum anteriorly by deep clefts, the scarcely differentiated pro-episterna, the free eyes on the sides of the laterally unmarginated head and many other characters, widely isolate the subfamily from the rest of the Byrrhidæ. There are two distinct tribes of the Amphicyrtinæ as follows:

Elytral epipleura only distinct basally, disappearing completely behind about the middle of the elytra, as in the Byrrhinæ... AMPHICYRTINI
 Elytral epipleura very wide, entire, extending virtually to the elytral apex, subhorizontal, perfectly flat, and, at the middle, about a fourth as wide as the entire body; coxæ more widely separated... LIOONINI

These insects are essentially peculiar to the more northern parts of the true Pacific coast regions.

Tribe AMPHICYRTINI.

This tribe is composed of two genera, differing extremely in size of the body, but both very convex and having polished integuments, with very sparse hairs or glabrous; they may be defined as follows:

* The misspelling of the family name Dascillidæ under the form "Dascyllidæ" by LeConte and Horn is quite unaccountable; it seems to have become universal in American literature.

Antenna short, with a loose 3-jointed club; eyes with coarse separated facets; elytra with feebly impressed lines and subserial arrangement of the punctures; tarsi slender, not lobed; anterior tibiæ slender, unmodified; body small in size. [Type *L. striolatus* n. sp.]

Lioligus

Antennæ long and subfiliform, never clavate; eyes finely and closely faceted; elytra without impressed lines, evenly but not regularly, much more closely punctate; third tarsal joint with a long oblique inferior lobe; anterior tibiæ broader, grooved, angulate externally; hind body more inflated; very much larger in size, more southern in habitat. [Type *A. chrysomelina* Erichs.] **Amphicyrta**

These genera are both represented by a number of species, which occur under stones or old bark and in other similar places.

Lioligus n. gen.

The body is oblong-oval, much more elongate than in *Amphicyrta*, always highly polished and usually metallic green in coloration. The head is very short, convex, the eyes rather pointed beneath, moderately convex, the surface adjoining them above somewhat impressed; the frontal margin makes a very broad arc from eye to eye and is strongly, evenly beaded, the antennæ inserted under its sides, just before the eyes; the epistoma is small, transverse, thin and projects anteriorly below the level of the front;—it is assumed that this piece, at any rate, takes the place of the epistoma or clypeus of the preceding subfamily. The labrum well developed, transverse, convex, with its angles rounded and apex sinuate medially, the mandibles stout, the mouth organs rather small and the last joint of the maxillary palpi slender, sharply pointed and impressed on its anterior side; the head is moderately retractile. The prothorax is transverse, convex, with the anterior angles not or very feebly produced, the base not or scarcely lobed medially, the scutellum rather shorter than wide, triangular and somewhat convex, and the elytra ogival at tip; apex of the prosternum entering a deep transverse mesosternal fossa; metasternum extremely short between the middle and hind coxæ; abdomen as long as the entire remainder of the body, with subequal segments and straight distinct sutures, the first fine medially; met-episterna short and very broad; hind coxæ rather small, oval, attenuate externally, attaining the met-episterna but not closely approaching the sides of the body; tarsi slender, cylindric, sparsely hispid, 5-jointed throughout, not

lobed, the first joint about one-half longer than the second, the claws well developed, rather slender, more strongly arcuate basally. The species may be known by the following characters:

- Upper surface never deeply, though sometimes rather evidently, punctate. 2
- Upper surface deeply punctate. 6
- 2—Color bright metallic green. 3
- Color pale brownish-testaceous throughout, without metallic reflection. . 5
- 3—Elytra much longer, oblong, almost three times as long as the prothorax and with somewhat coarse, distinct and subentire impressed lines. Rather elongate, subparallel, the elytra but little wider than the prothorax, polished, black, with strong green lustre, the under surface black, shining but non-metallic; the legs pale brown; head almost evenly, feebly convex, with remote and feebly impressed punctures; prothorax twice as wide as long, the sides rounded, becoming parallel in about basal half, converging anteriorly, the surface strongly convex, even, with small and very sparsely scattered, feebly impressed punctures, each bearing a moderately long fine erect hair; scutellum glabrous; elytra a little less than one-half longer than wide, oblong-oval, the sides parallel and very moderately arcuate, rounding and converging much more rapidly in barely apical third to the rather obtusely ogival tip, the surface with feebly though distinctly and broadly impressed, minutely, sparsely punctate lines, the subconvex intervals each with a sparse uneven series of larger but feeble, more asperate punctures, bearing rather long erect hairs; under surface sparsely, feebly and irregularly punctate. Length 2.7–3.3 mm.; width 1.3–1.7 mm. British Columbia (Metlakatla).—J. H. Keen. Abundant. **striolatus** n. sp.
- Elytra shorter, more oval, more inflated, never much more than twice as long as the prothorax, less punctured and never with very obvious impressed lines. 4
- 4—Stout, the hind body only very moderately inflated, black, with polished green lustre, generally more æneo-viridate anteriorly, blackish beneath, the abdominal apex and legs pale brown; head with very feeble remote punctures, obsoletely impressed along the median line of the vertex; prothorax slightly less than twice as wide as long, the sides broadly rounded, converging anteriorly, becoming a little more rounded and subparallel only in about basal third, the surface very convex, even, very finely and remotely, scarcely visibly punctate, the short erect hairs generally denuded; elytra barely a third longer than wide, a sixth or less wider than the prothorax, widest well before the middle, the sides broadly, evenly rounded, gradually converging but constantly more rapidly to the rather acutely ogival apex, the surface with feeble traces of impressed lines, which are much finer than in the preceding, the interstitial punctures very small, sparse and scarcely distinct, each bearing a moderately long erect hair; under surface nearly as in *striolatus*. Length 2.7–3.0 mm.; width 1.35–1.55 mm. British Columbia (Metlakatla).—Keen.
- keeni** n. sp.

Stout, more posteriorly inflated, very convex, similarly colored and with similar polished metallic reflection; head smaller, evenly convex, the very remotely scattered and feeble punctures more evident anteriorly; prothorax convex, distinctly less than twice as wide as long, the sides evenly converging and very evenly, moderately arcuate from base to apex, not becoming parallel basally, the punctures very fine and sparse; elytra more oval and inflated, about a fourth longer than wide, widest slightly before the middle, where they are more than a fourth wider than the prothorax, the sides evenly, rather strongly rounded, rapidly more converging posteriorly to the apex, which is more acutely ogival than in the two preceding, the impressed lines invisible, the series of well spaced and feeble punctures evident, each puncture bearing a rather long erect hair, these being rather more abundant and more persistent than in the two preceding; under surface shining, with small and very sparsely scattered punctures. Length 2.65 mm.; width 1.5 mm. Vancouver Island (Victoria). *æquabilis* n. sp.

5—More narrowly oval and more acuminate behind than in any of the preceding, pale in color, polished throughout, the punctures of the head and pronotum much larger and more numerous though widely separated; head evenly convex; prothorax about twice as wide as long, strongly convex, the sides broadly rounded, converging anteriorly, becoming subparallel in about basal half; elytra nearly three times as long as the prothorax and scarcely a sixth wider, widest well before the middle, the sides broadly rounded, gradually converging and rounded to the apex, which is more produced and acutely ogival than in any of the preceding, the surface without trace of impressed lines but with rather regular and widely spaced series of large but feeble, well spaced punctures, each bearing the usual long erect bristling hair; under surface sparsely punctured, pale ochreous, the abdomen acuminate posteriorly. Length 2.2–2.8 mm.; width 1.1–1.3 mm. Idaho (Cœur d'Alene),—Wickham.

pallidus n. sp.

6—Oblong-ovate, viridi-aneous above, shining, sparsely pilose, with deep, widely scattered punctures; head convex, the front with a subcanaliculiform impression; prothorax transverse, "elevato-pulvinato"; elytra with the margin reflexed; legs and antennæ rufopiceous; under surface violaceous. Length 2.6–3.0 mm.; width 1.3–1.5 mm. Alaska (Sitka). Under bark of dead trees, rare. [*Simplocaria nitida* Mots.—Bull. Mosc., 1845, IV, p. 362]. Above description transcribed from Mannerheim,—Bull. Mosc., 1852, p. 342. *nitidus* Mots.

There can apparently be but little doubt that the species named *Simplocaria nitida*, by Motschulsky, belongs to this genus, and its assignment to *Simplocaria* was probably due to the feebly impressed elytral lines noted in some of the above species but which are not mentioned by Mannerheim. I do not however quite comprehend

the expression "elevato-pulvinato," in describing the prothorax. The species are evidently numerous and it is scarcely probable that *nitidus* can be here redescribed under another name.

Amphicyrta Erichs.

Eucyphus Mann.

The body in this genus is notably large for the present family, with the hind body inflated and the upper surface very convex and glabrous. The head is moderately convex, arcuato-truncate at apex, the edge sharply beaded, the labrum large, moderately transverse, arcuato-truncate at tip and not or very feebly sinuate medially; it is joined at base to the front by an upwardly sloping band of dense coriaceous structure. The mentum is moderate, the mandibles bifid at tip and the apex of the fourth maxillary palpal joint is obliquely truncate and also subbifid. The prosternal process is beaded at the margins and its apex is rather acutely rounded, not entirely filling the deep mesosternal fossa. The hypomera are very broad, flat, parallel, separated anteriorly from the prosternum by a very deep and gradually attenuate open fissure; the episterna seem to be reduced to a thick margin at the inner posterior part of the hypomera and are attained by the transverse coxæ; the lateral edge of the pronotum is moderately acute and continues to the apical angles, which are not prolonged anteriorly. The metasternum between the middle and hind coxæ is rather long and the hind coxæ are transverse, attaining the very small met-epimera very near the sides of the body, the met-episterna only moderate in width. The abdomen has all the sutures distinct and rectilinear throughout the width and all the segments of subequal length. The legs are rather long and heavy, the anterior tibiæ with a broad shallow and polished, gradually evanescent groove on the anterior side externally and nearly attaining basal fourth, the other tibiæ with narrower external grooves for the partial shelter of the retractile tarsi in repose; the tarsi are densely clothed beneath with rather short, very pale hairs, the basal joint of the posterior longer than the next two, the fourth very small as usual and the strongly arcuate claws are slightly dilated and internally angulate at base. The scutellum is well developed, ogival and a little longer than wide. The antennæ are very long, filiform and somewhat compressed;

they are inserted at the extreme sides and front of the head and at only a slight distance before the eyes, which are large, rather convex, evenly oval and shorter than wide. The male is smaller and narrower than the female.

Of this anomalous genus there seem to be five species and a few subspecies in my collection, which may be described as follows:

Elytra even in surface or with but feeble traces of inequality, evenly punctured.....2

Elytra with irregular indentations, which for the most part assume a linear arrangement, the indentations having some punctures irregularly placed which are slightly larger than the regular punctuation. . 4

2—Color always pale castaneous; form oval, shining; head well developed, not coarsely, evenly punctate, the eyes prominent; antennæ very long and slender, almost perfectly filiform, pale ochreous, the penultimate joint much elongated, the second shortest, one-half as long as the third as usual, the latter longer than any of the succeeding joints except the last; prothorax convex, scarcely twice as wide as long, the sides moderately converging and feebly, very evenly arcuate from base to apex, the punctures fine, separated by two to four times their diameters, barely at all stronger or closer laterally; elytra a little more than a fourth longer than wide, widest at about the middle, where they are nearly one-half wider than the prothorax, the sides parallel and very evenly rounded, very obtusely and broadly rounded at apex, the punctures like those of the pronotum though a little larger and more indefinitely impressed as a rule; under surface shining, glabrous, finely, sparsely punctured, the metasternum more coarsely and closely laterad. Length (♂, ♀) 7.7–9.0 mm.; width 4.7–5.5 mm. California (northern coast regions). Abundant. [*Amphicyrta chrysomelina* Er.,—Germ. Zeitschr., IV, 1843, p. 40].

chrysomelina Erichs.

A—Similar to the preceding but more elongate and more oblong, the head similar, the antennæ even a little longer, extending still further behind the base of the elytra; prothorax somewhat wider, more than twice as wide as long, the similarly arcuate sides rather more strongly converging from base to apex, punctured as in *chrysomelina*, the scutellum a little larger, acutely ogival, closely punctate; elytra more elongate and more oblong, at the middle barely two-fifths wider than the prothorax, the sides parallel and nearly straight, rounding gradually basally and apically, the apex still more broadly rounded, similarly punctured. Length (♀) 9.3 mm.; width 5.6 mm. California (coast regions north of San Francisco).....**oblonga** n. subsp.

B—Similar to *chrysomelina* but smaller and with a notably smaller head, the antennæ more brownish and with the joints not quite so elongate, the penultimate (♂) not quite one-half longer than wide; prothorax formed nearly as in *oblonga*, rather more than twice as wide as long; elytra as in *chrysomelina* but less greatly

exceeding the prothorax in width, the sides arcuate. Length (♂) 6.6 mm.; width 3.9 mm. California (coast region north of San Francisco)..... **parvuliceps** n. subsp.

Color black, with feeblest piceous tinge and with very strong polish and feeble subæneous lustre above, piceous-black beneath, the legs rufo-piceous; form much narrower and more elongate than in *chrysomelina*, almost evenly oval, the head moderate, with prominent eyes, the antennæ long, filiform, ochreous, all the joints much elongated; prothorax formed as in *chrysomelina*, very convex, the punctures somewhat stronger; scutellum narrower, more elongate and more acutely ogival, with a very few sparsely scattered and exceedingly minute punctules; elytra more elongate, evenly oval, with arcuate sides and less broadly obtuse apex, almost one-half longer than wide, at the middle two-fifths wider than the prothorax, the surface very indefinitely uneven and with unusually fine and sparse punctures, the larger punctures toward the sides of the prosternum more widely separated than in the preceding forms. Length (♀) 8.4 mm.; width 4.8 mm. California (Mt. Diablo)... **elongata** n. sp.

Color always black or feebly picescent above, the under surface but little less deep black, the legs rufo-piceous; body always much smaller than in the preceding species, the lustre strongly shining but without metallic reflection of any kind..... 3

3—Oval, very moderately elongate, somewhat piceous-black, the head well developed; antennæ evidently shorter than in the preceding forms, more compressed, broader apically and more evidently though very gradually narrowed from apex to the first joint, the tenth barely a fourth longer than wide, ferruginous throughout; prothorax nearly as in *chrysomelina*, not quite twice as wide as long, similarly punctured but with the similarly converging sides rather less arcuate; elytra barely a fourth longer than wide, oblong-oval, with broadly rounded sides, very broadly and obtusely rounded at tip, the sculpture more cribrate, the punctures larger, deeper and rather closer, separated generally by about twice their widths; under surface nearly similar. Length (♂, ♀) 6.0–8.0 mm.; width 3.8–5.0 mm. California (San Francisco and northward). [*Amphicyrta dentipes* Erichs.,—l. c., 1843, IV, p. 40; *hybosoroides* Mann.,—Bull. Mosc., 1843, II, p. 287 (*Eucyphus*—Tenebrionidæ)].

dentipes Erichs.

Oval, still shorter than in the preceding and deeper black in color, the head notably smaller in relative size, the ochreous antennæ much longer, more slender and filiform, nearly as in *chrysomelina*, only very feebly broadening from the second joint, the penultimate joint about one-half longer than wide; prothorax much shorter than in *dentipes*, a little more than twice as wide as long, the converging sides very evenly but only just visibly arcuate, the punctures moderately small, deep and less separated than usual; scutellum flat, sharply ogival, sparsely punctulate; elytra (♀) barely visibly longer than wide, oblong-oval, with rounded sides and very broadly rounded apex, two-fifths wider than the prothorax or (♂) about a

fourth longer than wide, less broadly rounded at apex and less than a third wider than the prothorax, the punctures rather close-set and conspicuous; abdominal punctures larger and more numerous than usual. Length (♂, ♀) 5.8-7.0 mm.; width 3.6-4.7 mm. California (coast regions north of San Francisco).... **gentilis** n. sp.

A—Stouter than the preceding, with relatively narrower prothorax and much more inflated hind body, deep black; head and prothorax nearly similar, the sides of the latter rather more converging and deflexed apically; antennæ ochreous, nearly similar; scutellum more acutely ogival; elytra more oblong, about a fifth longer than wide, the parallel sides but very feebly arcuate though notably more rounding basally to the base of the prothorax than in any other species, very broadly rounded at apex, fully one-half wider than the prothorax, the punctures impressed, separated by rather less than twice their own widths; abdominal punctures finer and sparser as usual. Length (♀) 7.5 mm.; width 4.8 mm. California (locality as in the preceding)..... **ventricosa** n. subsp.

4—Stout, oval, moderately shining and piceous-black above, shining and much paler piceo-testaceous beneath; head well developed, largely retracted within the prothorax in the type, the ochreous antennæ long, very slender and filiform, nearly as in *chrysomelina*; prothorax very convex and almost vertically declivous latero-apically, distinctly less than twice as wide as long, the converging sides straight, becoming arcuate only at base, the punctures small but strong, rather more close-set than usual and more noticeably larger toward the sides though not very markedly so; scutellum elongate-ogival; elytra oval, nearly a third longer than wide, widest rather behind the middle, the sides broadly arcuate, very broadly rounded and obtuse at apex, the punctures unusually large, deep and close-set throughout; abdomen finely, sparsely and rather feebly punctate. Length (♀) 9.2 mm.; width 5.7 mm. Western Nevada. **nevadensis** n. sp.

The above species are for the most part somewhat "opinionative" perhaps, because of the absence of distinctive structural modifications, this being more marked even than in *Byrrhus*, for there is no vestiture of any kind to afford diversification, except the dense golden hairs covering parts of the tibiæ and the tarsi. I think however that the names assigned above stand for forms that can be recognized, and some of them—those proposed as species—seem certainly worthy of adoption. Individuals are not rare and we therefore have the benefit of series in coming to a conclusion in most cases.

Tribe LIOONINI.

There is but a single genus in this tribe, which resembles the preceding in general structure but differs in the very broad and

remarkable elytral epipleura, which are without even a suggested approximation elsewhere in the entire family. This genus may be described as follows:

Lioon n. gen.

Body oviform, convex, subglabrous or with very sparse erect hairs; head nearly as in the preceding tribe, short, the eyes well developed, moderately convex, strongly and densely faceted, rather pointed beneath, the front with a broadly arcuate, even, strongly elevated and acutely beaded edge from eye to eye, the pseudoepistoma projecting rather inferiorly as a short, transverse, smooth and flat truncate plate, the labrum transverse, deeply sinuate medially at apex. Mandibles broad, strongly arcuate, the apices truncate, very wide and having five acute and subequal teeth arranged in a nearly straight line throughout the entire width. Mouth organs moderate, the fourth maxillary palpal joint slender, gradually finely attenuate and unimpressed. Antennæ moderately short, not much compressed, inserted at the extreme sides and front of the head under the strong marginal beading, slender basally, gradually enlarged through the last five joints, the three penultimate rather transverse, the last oval, the third not very much shorter than the first two combined, the first smaller than usual in the preceding tribe. Prothorax nearly as in *Amphicyrta*, truncate rectilinearly at base, the sides with an acute edge to the apical angles, which are acute and feebly produced at the eyes from above, the surface very steeply sloping antero-laterally; scutellum moderate, acutely ogival; elytra short, very obtuse, sparsely punctate, without trace of impressed lines. Prosternum broadly arcuate posteriorly, the end of the notably wide process gently rounded and filling the entire mesosternal emargination, the hypomera very wide, parallel, demarcated anteriorly by a deep open fissure; mesosternum very short between the middle and posterior coxæ; met-episterna narrow, scarcely distinct. Abdomen rather narrow, with straight distinct sutures and subequal segments; coxæ very small, oval, very widely separated, the posterior but little wider than long, not even attaining the very broad epipleura, separated therefrom by half their own width. Legs moderate in length, rather slender, the tibiæ unmodified, the tarsi not retractile, slender, rather long, subcylindric, sparsely setulose on the under

surface, the third joint briefly oblique beneath the fourth but not strictly lobed, the basal joint of the posterior as long as the next two combined, the claws small, slender, feebly arcuate, straighter basally.

It will be noted that in most of its characters, and especially the small oval coxæ, the tarsi and the antennæ, this singular genus bears a much closer resemblance to *Lioligus* than it does to *Amphicyrta*; the mandibles are remarkably specialized. The species seem to be four in number and may be defined as follows:

Color pale brownish-testaceous, polished, with a feebly cupreous gloss, the under surface, legs and antennæ still paler and without metallic lustre; upper surface subglabrous, each puncture bearing an extremely small and fine subdecumbent or recurved hair, only visible on close observation; head with sparse though rather large punctures and with three large indentations, to some extent adventitious perhaps; prothorax very convex, twice as wide as long, the sides rounded and subparallel in basal, becoming strongly converging and straighter in apical, half, where the sides are subcompressed, the punctures everywhere sparse and extremely minute; elytra not quite as long as wide, parallel, with rounded sides and very broadly rounded apex, slightly more than twice as long as the prothorax and, at the middle, evidently wider, the punctures very sparse and minute though more visible than those of the pronotum; under surface throughout shining, minutely and very sparsely punctulate, the last ventral more coarsely but not densely. Length 3.7 mm.; width 2.3 mm. British Columbia (Metlakatla),—Keen..... **speculare** n. sp.

Color black or blackish, the upper surface with more or less metallic gloss. 2

2—Oval, stout, strongly convex, polished, piceous-black, with feeble and variable metallic glint above, testaceous throughout beneath, the antennæ somewhat infumate distally; punctures of the upper surface bearing each a short but rather coarse and very distinct pale hair, those of the head and pronotum subdecumbent, on the elytra more erect and hispid; surface of the pronotum with very large and rather feeble micro-reticulation, obsolescent on the head and completely wanting on the elytra; head rather coarsely and closely punctate, having a broad and feeble impression along the middle near the base; prothorax distinctly less than twice as wide as long, less compressed anteriorly than in the preceding though very declivous, the sides moderately converging, very evenly and feebly arcuate from base to apex, the punctures well separated though only moderately small, rather shallowly impressed but very distinct; elytra very short, much shorter than wide, not quite twice as long as the prothorax and, at the middle, evidently wider, parallel, with evenly arcuate sides and very broadly rounded apex, the surface vertical, even becoming inflexed apically as in the preceding, so that the actual

apex is not visible from a vertical viewpoint, the punctures rather sparse but impressed and very distinct; under surface shining, finely, sparsely punctate and with fine sparse hairs. Length 3.2-3.5 mm.; width 2.2-2.3 mm. California (Arcata, Humboldt Co.).

puncticeps n. sp.

Oval, subglobose, shining, cupreo-æneous above; head sparsely punctate, the front unequal, with a median lineolate impression; prothorax extremely smooth, sparsely pilose toward the sides, narrowed and compressed anteriorly, the anterior angles lobate, produced; elytra very sparsely punctulate, declivous posteriorly, the apex rounded; antennæ, legs and under surface of the body piceo-testaceous; anterior tibiæ unarmed. Length 3.5-4.0 mm.; width 2.7-3.0 mm. Alaska (Sitka). [*Amphicyrta simplicipes* Mann.,—Bull. Mosc., 1852, p. 342].....**simplicipes** Mann.

Rounded-ovate, much inflated, very convex, blackish-æneous, shining, clothed with slender erect pale hairs; head and prothorax finely punctured, the former the more strongly; prothorax more than twice as wide as long, strongly narrowed in front and much rounded at the sides, the apex broadly rounded, the base truncate, the apical angles sharp from above owing to the compression of the sides, the basal angles nearly right; elytra feebly and finely punctured, not at all striate, a little wider than the prothorax and but little longer than wide, much deflexed behind and conjointly rounded at apex; under surface piceo-testaceous, the legs and basal parts of the antennæ still paler, the last five joints of the latter obscure. Length 4.5 mm. California. [*Simplocaria inflata* Lec.,—Tr. Am. Ent. Soc., 1868, p. 62].**inflatum** Lec.

Both *speculare* and *puncticeps* are materially smaller than either *simplicipes* or *inflatum*, and *speculare* is further distinguished from any other by its pallid coloration and infinitesimal hairs of the upper surface, which could readily be overlooked. *Puncticeps* differs from *inflatum* in its smaller size, apparently shorter elytra and less transverse prothorax, stronger, closer sculpture and rather shorter vestiture, though this is pale, distinct and hispid. There can be no doubt, I think, that *Amphicyrta simplicipes* and *Simplocaria inflata*, which are certainly not specifically identical, belong to this genus, and under this assumption the failure to notice the extraordinary epipleura, the most conspicuous feature of the under surface, by both Mannerheim and LeConte, is most unaccountable.